ELEMENTS

OF THE

PHILOSOPHY

OF THE

HUMAN MIND.

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HUMAN MIND.

By DUGALD STEWART, F. R. S. Edin.
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TO

THE REVEREND

THOMAS REID, D. D.

PROFESSOR OF MORAL PHILOSOPHY

IN THE UNIVERSITY OF GLASGOW,

THIS WORK

IS INSCRIBED,

IN TESTIMONY OF

THE RESPECT AND AFFECTION

OF

THE AUTHOR.

ADVERTISEMENT.

IN various parts of the following Work, references are made to ſubſequent ſpeculations, which are not contained in it. Theſe ſpeculations it is my intention to reſume at ſome future period: but when I conſider the extent of my ſubject, and the many accidents which may divert me from the proſecution of it, I cannot venture ſo far, as to announce, in the title-page of this volume, any promiſe of a future publication.

SOME additional chapters are ſtill wanting, to complete the Analyſis of the Intellectual Powers. After finiſhing this, the courſe of my inquiries would lead me to treat, in the ſecond place, of Man conſidered as an active and moral being; and, thirdly, of Man conſidered as the member of a political ſociety.

COLLEGE OF EDINBURGH,
March 13, 1792.

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ELEMENTS

ELEMENTS

OF THE

PHILOSOPHY

OF THE

HUMAN MIND.

INTRODUCTION.

PART FIRST.

The Nature and Object of the Philoſophy of the Human Mind.

Introduction.

THE prejudice which is commonly entertained againſt metaphyſical ſpeculations ſeems to ariſe chiefly from two cauſes: Firſt, from an apprehenſion that the ſubjects about which they are employed, are placed beyond the reach of the human faculties; and, Secondly, from a belief that theſe ſubjects have no relation to the buſineſs of life.

THE frivolous and abſurd diſcuſſions which abound in the writings of moſt Metaphyſical authors, afford but too many arguments in juſtification of theſe opinions; and if ſuch diſcuſſions were to be admitted as a fair ſpecimen of what the hu-

Introduction. man mind is able to accompliſh in this department of ſcience, the contempt, into which it has fallen of late, might with juſtice be regarded, as no inconſiderable evidence of the progreſs which true philoſophy has made in the preſent age. Among the various ſubjects of inquiry, however, which, in conſequence of the vague uſe of language, are comprehended under the general title of Metaphyſics, there are ſome, which are eſſentially diſtinguiſhed from the reſt, both by the degree of evidence which accompanies their principles, and by the relation which they bear to the uſeful ſciences and arts: and it has unfortunately happened, that theſe have ſhared in that general diſcredit, into which the other branches of metaphyſics have juſtly fallen. To this circumſtance is probably to be aſcribed, the little progreſs which has hitherto been made in the PHILOSOPHY OF THE HUMAN MIND; a ſcience, ſo intereſting in its nature, and ſo important in its applications, that it could ſcarcely have failed, in theſe inquiſitive and enlightened times, to have excited a very general attention, if it had not accidentally been claſſed, in the public opinion, with the vain and unprofitable diſquiſitions of the ſchool-men.

In order to obviate theſe miſapprehenſions with reſpect to the ſubject of the following work, I have thought it proper, in this preliminary chapter, firſt, to explain, the Nature of the truths which I propoſe to inveſtigate; and, ſecondly, to point out ſome of the more important Applications of which they are ſuſceptible. In ſtating theſe preliminary obſervations, I may perhaps appear to ſome to be minute and tedious; but this fault, I am confident, will be readily pardoned by thoſe, who have ſtudied with care

care the principles of that ſcience of which I am to treat; and who are anxious to remove the prejudices which have, in a great meaſure, excluded it from the modern ſyſtems of education. In the progreſs of my work, I flatter myſelf that I ſhall not often have occaſion to ſolicit the indulgence of my readers, for an unneceſſary diffuſeneſs.

THE notions we annex to the words, Matter, and Mind, as is well remarked by Dr. Reid *, are merely relative. If I am aſked, what I mean by Matter? I can only explain myſelf by ſaying, it is that which is extended, figured, coloured, moveable, hard or ſoft, rough or ſmooth, hot or cold;—that is, I can define it in no other way, than by enumerating its ſenſible qualities. It is not matter, or body, which I perceive by my ſenſes; but only extenſion, figure, colour, and certain other qualities, which the conſtitution of my nature leads me to refer to ſomething, which is extended, figured, and coloured. The caſe is preciſely ſimilar with reſpect to Mind. We are not immediately conſcious of its exiſtence, but we are conſcious of ſenſation, thought, and volition; operations, which imply the exiſtence of ſomething which feels, thinks, and wills. Every man too is impreſſed with an irreſiſtible conviction, that all theſe ſenſations, thoughts, and volitions, belong to one and the ſame being; to that being, which he calls *himſelf;* a being, which he is led, by the conſtitution of his nature, to conſider as ſomething diſtinct from his body, and as not liable to be impaired by the loſs or mutilation of any of his organs.

* Eſſays on the Active Powers of Man, p. 8, 9.

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FROM theſe conſiderations, it appears, that we have the ſame evidence for the exiſtence of mind, that we have for the exiſtence of body; nay, if there be any difference between the two caſes, that we have ſtronger evidence for it; inaſmuch as the one is ſuggeſted to us, by the ſubjects of our own conſciouſneſs, and the other merely by the objects of our perceptions: and in this light, undoubtedly, the fact would appear to every perſon, were it not, that, from our earlieſt years, the attention is engroſſed with the qualities and laws of matter, an acquaintance with which is abſolutely neceſſary for the preſervation of our animal exiſtence. Hence it is, that theſe phenomena occupy our thoughts more than thoſe of mind; that we are perpetually tempted to explain the latter by the analogy of the former, and even to endeavour to refer them to the ſame general laws; and that we acquire habits of inattention to the ſubjects of our conſciouſneſs, too ſtrong to be afterwards ſurmounted, without the moſt perſevering induſtry.

IF the foregoing obſervations be well founded, they eſtabliſh the diſtinction between mind and matter, without any long proceſs of metaphyſical reaſoning *: for if our notions of both are merely relative; if we know the one, only by ſuch ſenſible qualities, as extenſion, figure, and ſolidity; and the other, by ſuch operations as ſenſation, thought, and volition; we are certainly entitled to ſay, that, in ſo far as body and mind are known to us, they appear to be ſubſtances of different natures. Perhaps, indeed, it would be more accurate to ſay of the ſcheme

* See Note [A], at the end of the volume.

of

of materialiſm, that it is inconceivable, than that it is falſe;— for let us conſider only what it implies: Is it not the object of thoſe who propoſe it, to explain the nature of that ſubſtance which feels, thinks, and wills? But when they attempt to do ſo, by ſaying that it is material, they ſurely forget, that body, as well as mind, is known to us by its qualities and attributes alone, and that we are as ignorant of the nature of the former, as of that of the latter *.

As all our knowledge of the material world is derived from the information of our ſenſes, Natural philoſophers have, in modern times, wiſely abandoned to Metaphyſicians, all ſpeculations concerning the nature of that ſubſtance of which it is compoſed; concerning the poſſibility or impoſſibility of its being created; concerning the efficient cauſes of the changes which take place in it; and even concerning the reality of its exiſtence, independent of that of percipient beings: and have confined themſelves to the humbler province of obſerving the phenomena it exhibits, and of aſcertaining their general laws. By purſuing this plan ſteadily, they have, in the courſe of the two laſt centuries, formed a body of ſcience, which not only does honour

* Some metaphyſicians, who appear to admit the truth of the foregoing reaſoning, have farther urged, that for any thing we can prove to the contrary, it is poſſible, that the unknown ſubſtance which has the qualities of extenſion, figure, and colour, may be the ſame with the unknown ſubſtance which has the attributes of feeling, thinking, and willing. But beſides that this is only an hypotheſis, which amounts to nothing more than a mere poſſibility; even if it were true, it would no more be proper to ſay of mind, that it is material, than to ſay of body, that it is ſpiritual.

to

Introduction.

to the human underſtanding, but has had a moſt important influence on the practical arts of life.——This experimental philoſophy, no one now is in danger of confounding with the metaphyſical ſpeculations already mentioned. Of the importance of theſe, as a ſeparate branch of ſtudy, it is poſſible that ſome may think more favourably than others; but they are obviouſly different in their nature, from the inveſtigations of phyſics; and it is of the utmoſt conſequence to the evidence of this laſt ſcience, that its principles ſhould not be blended with thoſe of the former.

A SIMILAR diſtinction takes place among the queſtions which may be ſtated relative to the human mind.——Whether it be extended or unextended; whether or not it has any relation to place; and (if it has) whether it reſides in the brain, or be ſpread over the body, by diffuſion; are queſtions perfectly analogous to thoſe which metaphyſicians have ſtarted on the ſubject of matter. It is unneceſſary to inquire, at preſent, whether or not they admit of anſwer. It is ſufficient for my purpoſe to remark, that they are as widely and obviouſly different from the view, which I propoſe to take, of the human mind in the following work, as the reveries of Berkeley concerning the non-exiſtence of the material world, are from the concluſions of Newton, and his followers.—It is farther evident, that the metaphyſical opinions, which we may happen to have formed concerning the nature either of body or of mind, and the efficient cauſes by which their phenomena are produced, have no neceſſary connexion with our inquiries concerning the laws, according to which theſe phenomena take place.—Whe-

ther (for example) the cauſe of gravitation be material or immaterial, is a point about which two Newtonians may differ, while they agree perfectly in their phyſical opinions. It is ſufficient, if both admit the general fact, that bodies tend to approach each other, with a force varying with their mutual diſtance, according to a certain law. In like manner, in the ſtudy of the human mind, the concluſions to which we are led, by a careful examination of the phenomena it exhibits, have no neceſſary connexion with our opinions concerning its nature and eſſence.—That when two ſubjects of thought, for inſtance, have been repeatedly preſented to the mind in conjunction, the one has a tendency to ſuggeſt the other, is a fact of which I can no more doubt, than of any thing for which I have the evidence of my ſenſes; and it is plainly a fact totally unconnected with any hypotheſis concerning the nature of the ſoul, and which will be as readily admitted by the materialiſt as by the Berkeleian.

NOTWITHSTANDING, however, the reality and importance of this diſtinction, it has not hitherto been ſufficiently attended to, by the philoſophers who have treated of the human mind. Dr. Reid is perhaps the only one who has perceived it clearly, or at leaſt who has kept it ſteadily in view, in all his inquiries. In the writings, indeed, of ſeveral other modern Metaphyſicians, we meet with a variety of important and well-aſcertained facts; but, in general, theſe facts are blended with ſpeculations upon ſubjects which are placed beyond the reach of the human faculties.——It is this mixture of fact, and of hypotheſis, which has brought

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brought the philoſophy of mind into ſome degree of diſcredit; nor will ever its real value be generally acknowledged, till the diſtinction I have endeavoured to illuſtrate, be underſtood, and attended to, by thoſe who ſpeculate on the ſubject. By confining their attention to the ſenſible qualities of body, and to the ſenſible phenomena it exhibits, we know what diſcoveries natural philoſophers have made: and if the labours of Metaphyſicians ſhall ever be rewarded with ſimilar ſucceſs, it can only be, by attentive and patient reflection on the ſubjects of their own conſciouſneſs.

I CANNOT help taking this opportunity of remarking, on the other hand, that if phyſical inquirers ſhould think of again employing themſelves in ſpeculations about the nature of matter, inſtead of attempting to aſcertain its ſenſible properties and laws, (and of late there ſeems to be ſuch a tendency among ſome of the followers of Boſcovich,) they will ſoon involve themſelves in an inextricable labyrinth, and the firſt principles of phyſics will be rendered as myſterious and chimerical, as the pneumatology of the ſchool-men.

THE little progreſs which has hitherto been made in the philoſophy of mind, will not appear ſurpriſing to thoſe who have attended to the hiſtory of natural knowledge. It is only ſince the time of Lord Bacon that the ſtudy of it has been proſecuted with any degree of ſucceſs, or that the proper method of conducting it has been generally underſtood. There is even ſome reaſon for doubting, from the crude ſpeculations on medical and chemical ſubjects which are daily offered to the public, whether

whether it be yet underſtood ſo completely as is commonly imagined; and whether a fuller illuſtration of the rules of philoſophiſing, than Bacon or his followers have given, might not be uſeful, even to phyſical inquirers.

When we reflect, in this manner, on the ſhortneſs of the period during which natural philoſophy has been ſucceſsfully cultivated; and, at the ſame time, conſider how open to our examination the laws of matter are, in compariſon of thoſe which regulate the phenomena of thought, we ſhall neither be diſpoſed to wonder, that the philoſophy of mind ſhould ſtill remain in its infancy, nor be diſcouraged in our hopes concerning its future progreſs. The excellent models of this ſpecies of inveſtigation, which the writings of Dr. Reid exhibit, give us ground to expect that the time is not far diſtant, when it ſhall aſſume that rank which it is entitled to hold, among the ſciences.

It would probably contribute much to accelerate the progreſs of the philoſophy of mind, if a diſtinct explanation were given of its nature and object; and if ſome general rules were laid down, with reſpect to the proper method of conducting the ſtudy of it. To this ſubject, however, which is of ſufficient extent to furniſh matter for a ſeparate work, I cannot attempt to do juſtice at preſent; and ſhall therefore confine myſelf to the illuſtration of a few fundamental principles, which it will be of eſſential importance for us to keep in view in the following inquiries.

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UPON a ſlight attention to the operations of our own minds, they appear to be ſo complicated, and ſo infinitely diverſified, that it ſeems to be impoſſible to reduce them to any general laws. In conſequence, however, of a more accurate examination, the proſpect clears up; and the phenomena, which appeared, at firſt, to be too various for our comprehenſion, are found to be the reſult of a comparatively ſmall number of ſimple and uncompounded faculties, or of ſimple and uncompounded principles of action. Theſe faculties and principles are the general laws of our conſtitution, and hold the ſame place in the philoſophy of mind, that the general laws we inveſtigate in phyſics, hold in that branch of ſcience. In both caſes, the laws which nature has eſtabliſhed, are to be inveſtigated only by an examination of facts; and in both caſes, a knowledge of theſe laws leads to an explanation of an infinite number of phenomena.

IN the inveſtigation of phyſical laws, it is well known, that our inquiries muſt always terminate in ſome general fact, of which no account can be given, but that ſuch is the conſtitution of nature. After we have eſtabliſhed, for example, from the aſtronomical phenomena, the univerſality of the law of gravitation, it may ſtill be aſked, whether this law implies the conſtant agency of mind; and (upon the ſuppoſition that it does) whether it be probable that the Deity always operates immediately, or by means of ſubordinate inſtruments? But theſe queſtions, however curious, do not fall under the province of the natural philoſopher. It is ſufficient for his purpoſe, if the univerſality of the fact be admitted.

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THE caſe is exactly the ſame in the philoſophy of mind. When we have once aſcertained a general fact; ſuch as, the various laws which regulate the aſſociation of ideas, or the dependence of memory on that effort of the mind which we call, Attention; it is all we ought to aim at, in this branch of ſcience. If we proceed no farther than facts for which we have the evidence of our own conſciouſneſs, our concluſions will be no leſs certain, than thoſe in phyſics: but if our curioſity leads us to attempt an explanation of the aſſociation of ideas, by certain ſuppoſed vibrations, or other changes, in the ſtate of the brain; or to explain memory, by means of ſuppoſed impreſſions and traces in the ſenſorium; we evidently blend a collection of important and well-aſcertained truths, with principles which reſt wholly on conjecture *.

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* There is indeed one view of the connexion between Mind and Matter, which is perfectly agreeable to the juſt rules of philoſophy. The object of this is, to aſcertain the laws which regulate their union, without attempting to explain in what manner they are united.

Lord Bacon was, I believe, the firſt who gave a diſtinct idea of this ſort of ſpeculation; and I do not know that much progreſs has yet been made in it. In his books *de Augmentis Scientiarum*, a variety of ſubjects are enumerated, in order to illuſtrate its nature; and, undoubtedly, moſt of theſe are in a high degree curious and important. The following liſt comprehends the chief of thoſe he has mentioned; with the addition of ſeveral others, recommended to the conſideration of Philoſophers and of Medical Inquirers, by the late Dr. Gregory. See his Lectures on the Duties and Qualifications of a Phyſician.

1. The doctrine of the preſervation and improvement of the different ſenſes.

2. The hiſtory of the power and influence of imagination.

3. The hiſtory of the ſeveral ſpecies of enthuſiaſm.

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THE obſervations which have been now ſtated, with reſpect to the proper limits of philoſophical curioſity, have too frequently eſcaped the attention of ſpeculative men, in all the different departments of ſcience. In none of theſe, however, has this inattention produced ſuch a variety of errors and abſurdities, as in the ſcience of mind; a ſubject to which, till of late, it does not ſeem to have been ſuſpected, that the general rules of philoſophiſing are applicable. The ſtrange mixture of fact and hypotheſis, which the greater part of metaphyſical inquiries exhibit, had led almoſt univerſally to a belief, that it is only a

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4. The hiſtory of the various circumſtances in parents, that have an influence on conception, and the conſtitution and characters of their children.

5. The hiſtory of dreams.

6. The hiſtory of the laws of cuſtom and habit.

7. The hiſtory of the effects of muſic, and of ſuch other things as operate on the mind and body, in conſequence of impreſſions made on the ſenſes.

8. The hiſtory of natural ſigns and language, comprehending the doctrine of phyſiognomy and of outward geſture.

9. The hiſtory of the power and laws of the principle of imitation.

To this liſt various other ſubjects might be added; particularly, the hiſtory of the laws of memory, in ſo far as they appear to be connected with the ſtate of the body; and the hiſtory of the different ſpecies of madneſs.

This view of the connexion between Mind and Matter does not fall properly under the plan of the following work; in which my leading object is to aſcertain the principles of our nature, in ſo far as they can be diſcovered by attention to the ſubjects of our own conſciouſneſs; and to apply theſe principles to explain the phenomena ariſing from them. Various incidental remarks, however, will occur in the courſe of our inquiries, tending to illuſtrate ſome of the ſubjects comprehended in the foregoing enumeration.

very

very faint and doubtful light, which human reaſon can ever expect to throw on this dark, but intereſting, field of ſpeculation. Introduction.

BESIDE this inattention to the proper limits of philoſophical inquiry, other ſources of error, from which the ſcience of phyſics is entirely exempted, have contributed to retard the progreſs of the philoſophy of mind. Of theſe, the moſt important proceed from that diſpoſition which is ſo natural to every perſon at the commencement of his philoſophical purſuits, to explain intellectual and moral phenomena by the analogy of the material world.

I BEFORE took notice of thoſe habits of inattention to the ſubjects of our conſciouſneſs, which take their riſe in that period of our lives when we are neceſſarily employed in acquiring a knowledge of the properties and laws of matter. In conſequence of this early familiarity with the phenomena of the material world, they appear to us leſs myſterious than thoſe of mind; and we are apt to think that we have advanced one ſtep in explaining the latter, when we can point out ſome analogy between them and the former. It is owing to the ſame circumſtance, that we have ſcarcely any appropriated language with reſpect to mind, and that the words which expreſs its different operations, are almoſt all borrowed from the objects of our ſenſes. It muſt, however, appear manifeſt, upon a very little reflection, that as the two ſubjects are eſſentially diſtinct, and as each of them has its peculiar laws, the analogies we are pleaſed to fancy between them, can be of no uſe in illuſtrating either; and that it is no leſs unphiloſophical to attempt

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tempt an explanation of perception, or of the aſſociation of ideas, upon mechanical principles; than it would be to explain the phenomena of gravitation, by ſuppoſing, as ſome of the ancients did, the particles of matter to be animated with principles of motion; or to explain the chemical phenomena of elective attractions, by ſuppoſing the ſubſtances among which they are obſerved, to be endowed with thought and volition.—The analogy of matter, therefore, can be of no uſe in the inquiries which form the object of the following work; but, on the contrary, is to be guarded againſt, as one of the principal ſources of error to which we are liable.

AMONG the different philoſophers who have ſpeculated concerning the human mind, very few indeed can be mentioned, who have at all times been able to guard againſt analogical theories. At the ſame time, it muſt be acknowledged, that ſince the publication of Des Cartes' writings, there has been a gradual, and, on the whole, a very remarkable improvement in this branch of ſcience. One ſtriking proof of this is, the contraſt between the metaphyſical ſpeculations of ſome of the moſt eminent philoſophers in England at the end of the laſt century, and thoſe which we find in the ſyſtems, however imperfect, of the preſent age. Would any writer now offer to the world, ſuch concluſions with reſpect to the mind, as are contained in the two following paſſages from Locke and Newton? "Habits," (ſays Locke,) "are but trains of motion in the animal ſpirits, which, "once ſet a-going, continue in the ſame ſteps they had been "uſed to, which, by often treading, are worn into a ſmooth "path." And Newton himſelf has propoſed the following query,

query, concerning the manner in which the mind perceives external objects. "Is not," (ſays he,) "the ſenſorium of animals "the place where the ſentient ſubſtance is preſent, and to "which the ſenſible ſpecies of things are brought, through the "nerves and brain, that they may be perceived by the mind "preſent in that place?"—In the courſe of the following Eſſays, I ſhall have occaſion to quote various other paſſages from later writers, in which an attempt is made to explain the other phenomena of mind, upon ſimilar principles.

It is however much to be regretted, that even ſince the period when philoſophers began to adopt a more rational plan of inquiry with reſpect to ſuch ſubjects, they have been obliged to ſpend ſo much of their time in clearing away the rubbiſh collected by their predeceſſors. This indeed was a preliminary ſtep, which the ſtate of the ſcience, and the concluſions to which it had led, rendered abſolutely neceſſary; for, however important the poſitive advantages may be, which are to be expected from its future progreſs, they are by no means ſo eſſential to human improvement and happineſs, as a ſatisfactory refutation of that ſceptical philoſophy, which had ſtruck at the root of all knowledge, and all belief. Such a refutation ſeems to have been the principal object which Dr. Reid propoſed to himſelf in his metaphyſical inquiries; and to this object his labours have been directed with ſo much ability, candour, and perſeverance, that unleſs future ſceptics ſhould occupy a ground very different from that of their predeceſſors, it is not likely that the controverſy will ever be renewed. The rubbiſh being now removed, and the foundations laid, it is time to begin the ſuperſtructure. The

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progreſs which I have made in it is, I am ſenſible, very inconſiderable; yet I flatter myſelf, that the little I have done, will be ſufficient to illuſtrate the importance of the ſtudy, and to recommend the ſubjects of which I am to treat, to the attention of others.

AFTER the remarks which I have now made, the reader will not be ſurpriſed to find, that I have ſtudiouſly avoided the conſideration of thoſe queſtions which have been agitated in the preſent age, between the patrons of the ſceptical philoſophy, and their opponents. Theſe controverſies have, in truth, no peculiar connexion with the inquiries on which I am to enter. It is indeed only by an examination of the principles of our nature, that they can be brought to a ſatisfactory concluſion; but ſuppoſing them to remain undecided, our ſceptical doubts concerning the certainty of human knowledge, would no more affect the philoſophy of mind, than they would affect any of the branches of phyſics; nor would our doubts concerning even the exiſtence of mind, affect this branch of ſcience, any more than the doubts of the Berkleian, concerning the exiſtence of matter, affect his opinions in natural philoſophy.

To what purpoſes the philoſophy of the human mind, according to the view which I propoſe to take of it, is ſubſervient, I ſhall endeavour to explain, at ſome length, in the following ſection.

PART SECOND.

SECTION I.

Of the Utility of the Philoſophy of the Human Mind.

IT has been often remarked, that there is a mutual connexion between the different arts and ſciences; and that the improvements which are made in one branch of human knowledge, frequently throw light on others, to which it has apparently a very remote relation. The modern diſcoveries in aſtronomy, and in pure mathematics, have contributed to bring the art of navigation to a degree of perfection formerly unknown. The rapid progreſs which has been lately made in aſtronomy, anatomy, and botany, has been chiefly owing to the aid which theſe ſciences have received from the art of the optician.

ALTHOUGH, however, the different departments of ſcience and of art mutually reflect light on each other, it is not always neceſſary either for the philoſopher or the artiſt to aim at the acquiſition of general knowledge. Both of them may ſafely take many principles for granted, without being able to demonſtrate their truth. A ſeaman, though ignorant of mathematics, may apply, with correctneſs and dexterity, the rules for finding the longitude: An aſtronomer, or a botaniſt, though

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THESE obſervations are daily exemplified in the caſe of the artiſt; who has ſeldom either inclination or leiſure to ſpeculate concerning the principles of his art. It is rarely, however, we meet with a man of ſcience, who has confined his ſtudies wholly to one branch of knowledge. That curioſity, which he has been accuſtomed to indulge in the courſe of his favourite purſuit, will naturally extend itſelf to every remarkable object which falls under his obſervation; and can ſcarcely fail to be a ſource of perpetual diſſatisfaction to his mind, till it has been ſo far gratified as to enable him to explain all the various phenomena, which his profeſſional habits are every day preſenting to his view.

As every particular ſcience is in this manner connected with others, to which it naturally directs the attention, ſo all the purſuits of life, whether they terminate in ſpeculation or action, are connected with that general ſcience, which has the human mind for its object. The powers of the underſtanding are inſtruments which all men employ; and his curioſity muſt be ſmall indeed, who paſſes through life in a total ignorance of faculties, which his wants and neceſſities force him habitually to exerciſe, and which ſo remarkably diſtinguiſh man from the lower animals. The active principles of our nature, which, by their various modifications and combinations, give riſe to all the moral differences among men, are fitted, in a ſtill higher degree, if poſſible, to intereſt thoſe, who are either diſpoſed to reflect on their own cha-

racters, or to obſerve, with attention, the characters of others. The phenomena reſulting from theſe faculties and principles of the mind, are every moment ſoliciting our notice; and open to our examination, a field of diſcovery, as inexhauſtible as the phenomena of the material world; and exhibiting not leſs ſtriking marks of divine wiſdom. Introduction.

WHILE all the ſciences, and all the purſuits of life, have this common tendency to lead our inquiries to the philoſophy of human nature, this laſt branch of knowledge borrows its principles from no other ſcience whatever. Hence there is ſomething in the ſtudy of it, which is peculiarly gratifying to a reflecting and inquiſitive mind; and ſomething in the concluſions to which it leads, on which the mind reſts with peculiar ſatisfaction. Till once our opinions are in ſome degree fixed with reſpect to it, we abandon ourſelves, with reluctance, to particular ſcientific inveſtigations; and on the other hand, a general knowledge of ſuch of its principles as are moſt fitted to excite the curioſity, not only prepares us for engaging in other purſuits with more liberal and comprehenſive views, but leaves us at liberty to proſecute them with a more undivided and concentrated attention.

IT is not, however, merely as a ſubject of ſpeculative curioſity, that the principles of the human mind deſerve a careful examination. The advantages to be expected from a ſucceſsful analyſis of it are various; and ſome of them of ſuch importance, as to render it aſtoniſhing, that, amidſt all the ſucceſs with which the ſubordinate ſciences have been cultivated, this, which com-

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prehends the principles of all of them, ſhould be ſtill ſuffered to remain in its infancy.

I SHALL endeavour to illuſtrate a few of theſe advantages, beginning with what appears to me to be the moſt important of any; the light, which a philoſophical analyſis of the principles of the mind would neceſſarily throw, on the ſubjects of intellectual and moral education.

THE moſt eſſential objects of education are the two following: Firſt, to cultivate all the various principles of our nature, both ſpeculative and active, in ſuch a manner as to bring them to the greateſt perfection of which they are ſuſceptible; and, Secondly, by watching over the impreſſions and aſſociations which the mind receives in early life, to ſecure it againſt the influence of prevailing errors; and, as far as poſſible, to engage its prepoſſeſſions on the ſide of truth. It is only upon a philoſophical analyſis of the mind, that a ſyſtematical plan can be founded, for the accompliſhment of either of theſe purpoſes.

THERE are few individuals, whoſe education has been conducted in every reſpect with attention and judgment. Almoſt every man of reflection is conſcious, when he arrives at maturity, of many defects in his mental powers; and of many inconvenient habits, which might have been prevented or remedied in his infancy or youth. Such a conſciouſneſs is the firſt ſtep towards improvement; and the perſon who feels it, if he is poſſeſſed of reſolution and ſteadineſs, will not ſcruple to begin, even in advanced years, a new courſe of education for himſelf.

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The degree of reflection and obſervation, indeed, which is neceſſary for this purpoſe, cannot be expected from any one at a very early period of life, as theſe are the laſt powers of the mind which unfold themſelves; but it is never too late to think of the improvement of our faculties; and much progreſs may be made, in the art of applying them ſucceſsfully to their proper objects, or in obviating the inconveniences reſulting from their imperfection. not only in manhood, but in old age.

It is not, however, to the miſtakes of our early inſtructors, that all our intellectual defects are to be aſcribed. There is no profeſſion or purſuit which has not habits peculiar to itſelf; and which does not leave ſome powers of the mind dormant, while it exerciſes and improves the reſt. If we wiſh, therefore, to cultivate the mind to the extent of its capacity, we muſt not reſt ſatisfied with that employment which its faculties receive from our particular ſituation in life. It is not in the awkward and profeſſional form of a mechanic, who has ſtrengthened particular muſcles of his body by the habits of his trade, that we are to look for the perfection of our animal nature: neither is it among men of confined purſuits, whether ſpeculative or active, that we are to expect to find the human mind in its higheſt ſtate of cultivation. A variety of exerciſes is neceſſary to preſerve the animal frame in vigour and beauty; and a variety of thoſe occupations which literature and ſcience afford, added to a promiſcuous intercourſe with the world, in the habits of converſation and buſineſs, is no leſs neceſſary for the improvement of the underſtanding. I acknowledge, that there are ſome profeſſions, in which a man of very confined acquiſitions may arrive

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arrive at the firſt eminence; and in which he will perhaps be the more likely to excel, the more he has concentrated the whole force of his mind to one particular object. But ſuch a perſon, however diſtinguiſhed in his own ſphere, is educated merely to be a literary artiſan; and neither attains the perfection, nor the happineſs, of his nature. "That education only "can be conſidered as complete and generous, which" (in the language of Milton) "fits a man to perform juſtly, ſkilfully, "and magnanimouſly, all the offices, both private and public, "of peace, and of war *."

I HOPE it will not be ſuppoſed, from the foregoing obſervations, that they are meant to recommend an indiſcriminate attention to all the objects of ſpeculation and of action. Nothing can be more evident, than the neceſſity of limiting the field of our exertion, if we wiſh to benefit ſociety by our labours. But it is perfectly conſiſtent with the moſt intenſe application to our favourite purſuit, to cultivate that general acquaintance with letters and with the world, which may be ſufficient to enlarge the mind, and to preſerve it from any danger of contracting the pedantry of a particular profeſſion. In many caſes, (as was already remarked,) the ſciences reflect light on each other; and the general acquiſitions which we have made in other purſuits, may furniſh us with uſeful helps for the farther proſecution of our own. But even in thoſe inſtances in which the caſe is otherwiſe, and in which theſe liberal accompliſhments muſt be purchaſed by the ſacrifice of a

* Tractate of Education.

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part of our profeſſional eminence, the acquiſition of them will amply repay any loſs we may ſuſtain. It ought not to be the leading object of any one, to become an eminent metaphyſician, mathematician, or poet; but to render himſelf happy as an individual, and an agreeable, a reſpectable, and an uſeful member of ſociety. A man who loſes his ſight, improves the ſenſibility of his touch; but who would conſent, for ſuch a recompence, to part with the pleaſures which he receives from the eye?

It is almoſt unneceſſary for me to remark, how much individuals would be aſſiſted in the proper and liberal culture of the mind, if they were previouſly led to take a comprehenſive ſurvey of human nature in all its parts; of its various faculties, and powers, and ſources of enjoyment; and of the effects which are produced on theſe principles by particular ſituations. It is ſuch a knowledge alone of the capacities of the mind, that can enable a perſon to judge of his own acquiſitions; and to employ the moſt effectual means for ſupplying his defects, and removing his inconvenient habits. Without ſome degree of it, every man is in danger of contracting bad habits, before he is aware; and of ſuffering ſome of his powers to go to decay, for want of proper exerciſe.

If the buſineſs of early education were more thoroughly, and more generally, underſtood, it would be leſs neceſſary for individuals, when they arrive at maturity, to form plans of improvement for themſelves. But education never can be ſyſtematically directed to its proper objects, till we have obtained,

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tained, not only an accurate analyſis of the general principles of our nature, and an account of the moſt important laws which regulate their operation; but an explanation of the various modifications and combinations of theſe principles, which produce that diverſity of talents, genius, and character, we obſerve among men. To inſtruct youth in the languages, and in the ſciences, is comparatively of little importance, if we are inattentive to the habits they acquire; and are not careful in giving, to all their different faculties, and all their different principles of action, a proper degree of employment. Abſtracting entirely from the culture of their moral powers, how extenſive and difficult is the buſineſs of conducting their intellectual improvement! To watch over the aſſociations which they form in their tender years; to give them early habits of mental activity; to rouze their curioſity, and to direct it to proper objects; to exerciſe their ingenuity and invention; to cultivate in their minds a turn for ſpeculation, and at the ſame time preſerve their attention alive to the objects around them; to awaken their ſenſibilities to the beauties of nature, and to inſpire them with a reliſh for intellectual enjoyment;—theſe form but a part of the buſineſs of education; and yet the execution even of this part requires an acquaintance with the general principles of our nature, which ſeldom falls to the ſhare of thoſe to whom the inſtruction of youth is commonly intruſted.——Nor will ſuch a theoretical knowledge of the human mind, as I have now deſcribed, be always ſufficient in practice. An uncommon degree of ſagacity is frequently requiſite, in order to accommodate general rules to particular tempers, and characters.—In whatever way we chuſe to account for it, whether

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by original organiſation, or by the operation of moral cauſes, in very early infancy; no fact can be more undeniable, than that there are important differences diſcernible in the minds of children, previous to that period at which, in general, their intellectual education commences. There is, too, a certain hereditary character (whether reſulting from phyſical conſtitution, or caught from imitation and the influence of ſituation), which appears remarkably in particular families. One race, for a ſucceſſion of generations, is diſtinguiſhed by a genius for the abſtract ſciences, while it is deficient in vivacity, in imagination, and in taſte: another is no leſs diſtinguiſhed for wit, and gaiety, and fancy; while it appears incapable of patient attention, or of profound reſearch. The ſyſtem of education which is proper to be adopted in particular caſes, ought, undoubtedly, to have ſome reference to theſe circumſtances; and to be calculated, as much as poſſible, to develope and to cheriſh thoſe intellectual and active principles, in which a natural deficiency is moſt to be apprehended. Monteſquieu, and other ſpeculative politicians, have inſiſted much on the reference which education and laws ſhould have to climate. I ſhall not take upon me to ſay, how far their concluſions on this ſubject are juſt; but I am fully perſuaded, that there is a foundation in philoſophy, and good ſenſe, for accommodating, at a very early period of life, the education of individuals to thoſe particular turns of mind, to which, from hereditary propenſities, or from moral ſituation, they may be preſumed to have a natural tendency.

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THERE are few ſubjects more hackneyed than that of education; and yet there is none, upon which the opinions of the world are ſtill more divided. Nor is this ſurpriſing; for moſt of thoſe who have ſpeculated concerning it, have confined their attention chiefly to incidental queſtions about the comparative advantages of public or private inſtruction, or the utility of particular languages or ſciences; without attempting a previous examination of thoſe faculties and principles of the mind, which it is the great object of education to improve. Many excellent detached obſervations, indeed, both on the intellectual and moral powers, are to be collected from the writings of ancient and modern authors; but I do not know, that in any language an attempt has been made to analiſe and illuſtrate the principles of human nature, in order to lay a philoſophical foundation for their proper culture.

I HAVE even heard ſome very ingenious and intelligent men diſpute the propriety of ſo ſyſtematical a plan of inſtruction. The moſt ſucceſsful and ſplendid exertions, both in the ſciences and arts, (it has been frequently remarked,) have been made by individuals, in whoſe minds the ſeeds of genius were allowed to ſhoot up, wild and free; while, from the moſt careful and ſkilful tuition, ſeldom any thing reſults above mediocrity. I ſhall not, at preſent, enter into any diſcuſſions with reſpect to the certainty of the fact on which this opinion is founded. Suppoſing the fact to be completely eſtabliſhed, it muſt ſtill be remembered, that originality of genius does not always imply vigour and comprehenſiveneſs, and liberality of mind; and that

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it is deſirable only, in ſo far as it is compatible with theſe more valuable qualities. I already hinted, that there are ſome purſuits, in which, as they require the exertion only of a ſmall number of our faculties, an individual, who has a natural turn for them, will be more likely to diſtinguiſh himſelf, by being ſuffered to follow his original bias, than if his attention were diſtracted by a more liberal courſe of ſtudy. But wherever ſuch men are to be found, they muſt be conſidered, on the moſt favourable ſuppoſition, as having ſacrificed, to a certain degree, the perfection and the happineſs of their nature, to the amuſement or inſtruction of others. It is too, in times of general darkneſs and barbariſm, that what is commonly called originality of genius moſt frequently appears: and ſurely the great aim of an enlightened and benevolent philoſophy, is not to rear a ſmall number of individuals, who may be regarded as prodigies in an ignorant and admiring age, but to diffuſe, as widely as poſſible, that degree of cultivation which may enable the bulk of a people to poſſeſs all the intellectual and moral improvement of which their nature is ſuſceptible. "Original "genius" (ſays Voltaire) "occurs but ſeldom in a nation "where the literary taſte is formed. The number of cultivated "minds which there abound, like the trees in a thick and "flouriſhing foreſt, prevent any ſingle individual from rearing "his head far above the reſt. Where trade is in few hands, "we meet with a ſmall number of over-grown fortunes in the "midſt of a general poverty: in proportion as it extends, opu-"lence becomes general, and great fortunes rare. It is, pre-"ciſely, becauſe there is at preſent much light, and much

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To what purpoſe, indeed, it may be ſaid, all this labour? Is not the importance of every thing to man, to be ultimately eſtimated by its tendency to promote his happineſs? And is not our daily experience ſufficient to convince us, that this is, in general, by no means proportioned to the culture which his nature has received?—Nay, is there not ſome ground for ſuſpecting, that the lower orders of men enjoy, on the whole, a more enviable condition, than their more enlightened and refined ſuperiors?

THE truth, I apprehend, is, that happineſs, in ſo far as it ariſes from the mind itſelf, will be always proportioned to the degree of perfection which its powers have attained; but that, in cultivating theſe powers, with a view to this moſt important of all objects, it is eſſentially neceſſary that ſuch a degree of attention be beſtowed on all of them, as may preſerve them in that ſtate of relative ſtrength, which appears to be agreeable to the intentions of nature. In conſequence of an excluſive attention to the culture of the imagination, the taſte, the reaſoning faculty, or any of the active principles, it is poſſible that the pleaſures of human life may be diminiſhed, or its pains increaſed: but the inconveniences which are experienced in ſuch caſes, are not to be aſcribed to education, but to a partial and injudicious education. In ſuch caſes, it is poſſible, that the poet, the metaphyſician, or the man of taſte and refinement, may appear to diſadvantage, when compared with the vulgar; for

for ſuch is the benevolent appointment of Providence with reſpect to the lower orders, that, although not one principle of their nature be completely unfolded, the whole of theſe principles preſerve among themſelves, that balance which is favourable to the tranquillity of their minds, and to a prudent and ſteady conduct in the limited ſphere which is aſſigned to them, far more completely, than in thoſe of their ſuperiors, whoſe education has been conducted on an erroneous or imperfect ſyſtem: but all this, far from weakening the force of the foregoing obſervations, only ſerves to demonſtrate how impoſſible it always will be, to form a rational plan for the improvement of the mind, without an accurate and comprehenſive knowledge of the principles of the human conſtitution.

THE remarks which have been already made, are, I flatter myſelf, ſufficient to illuſtrate the dangerous conſequences which are likely to reſult from a partial and injudicious cultivation of the mind; and, at the ſame time, to point out the utility of the intellectual philoſophy, in enabling us to preſerve a proper balance among all its various faculties, principles of action, and capacities of enjoyment. Many additional obſervations might be offered, on the tendency which an accurate analyſis of its powers might probably have, to ſuggeſt rules for their farther improvement, and for a more ſucceſsful application of them to their proper purpoſes: but this ſubject I ſhall not proſecute at preſent, as the illuſtration of it is one of the leading objects of the following work.—That the memory, the imagination, or the reaſoning faculty, are to be inſtantly ſtrengthened in conſequence of our ſpeculations concerning their nature, it would be

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abſurd to ſuppoſe; but it is ſurely far from being unreaſonable to think, that an acquaintance with the laws which regulate theſe powers, may ſuggeſt ſome uſeful rules for their gradual cultivation; for remedying their defects, in the caſe of individuals, and even for extending thoſe limits, which nature ſeems, at firſt view, to have aſſigned them.

To how great a degree of perfection the intellectual and moral nature of man is capable of being raiſed by cultivation, it is difficult to conceive. The effects of early, continued, and ſyſtematical education, in the caſe of thoſe children who are trained, for the ſake of gain, to feats of ſtrength and agility, juſtify, perhaps, the moſt ſanguine views which it is poſſible for a philoſopher to form, with reſpect to the improvement of the ſpecies.

I NOW proceed to conſider, how far the philoſophy of mind may be uſeful in accompliſhing the ſecond object of education; by aſſiſting us in the management of early impreſſions and aſſociations.

BY far the greater part of the opinions on which we act in life, are not the reſult of our own inveſtigations; but are adopted implicitly, in infancy and youth, upon the authority of others. Even the great principles of morality, although implanted in every heart, are commonly aided and cheriſhed, at leaſt to a certain degree, by the care of our inſtructors. —All this is undoubtedly agreeable to the intentions of nature; and, indeed, were the caſe otherwiſe, ſociety could not ſubſiſt;

for nothing can be more evident, than that the bulk of mankind, condemned as they are to laborious occupations, which are incompatible with intellectual improvement, are perfectly incapable of forming their own opinions on ſome of the moſt important ſubjects that can employ the human mind. It is evident, at the ſame time, that as no ſyſtem of education is perfect, a variety of prejudices muſt, in this way, take an early hold of our belief; ſo as to acquire over it an influence not inferior to that of the moſt incontrovertible truths. When a child hears, either a ſpeculative abſurdity, or an erroneous principle of action, recommended and enforced daily, by the ſame voice which firſt conveyed to it thoſe ſimple and ſublime leſſons of morality and religion which are congenial to its nature, is it to be wondered at, that, in future life, it ſhould find it ſo difficult to eradicate prejudices which have twined their roots with all the eſſential principles of the human frame?——If ſuch, however, be the obvious intentions of nature, with reſpect to thoſe orders of men who are employed in bodily labour, it is equally clear, that ſhe meant to impoſe it as a double obligation on thoſe who receive the advantages of a liberal education, to examine, with the moſt ſcrupulous care, the foundation of all thoſe received opinions, which have any connexion with morality, or with human happineſs. If the multitude muſt be led, it is of conſequence, ſurely, that it ſhould be led by enlightened conductors; by men who are able to diſtinguiſh truth from error; and to draw the line between thoſe prejudices which are innocent or ſalutary, (if indeed there are any prejudices which are really ſalutary,) and thoſe which are hoſtile to the intereſts of virtue and of mankind.

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IN ſuch a ſtate of ſociety as that in which we live, the prejudices of a moral, a political, and a religious nature, which we imbibe in early life, are ſo various, and at the ſame time ſo intimately blended with the belief we entertain of the moſt ſacred and important truths, that a great part of the life of a philoſopher muſt neceſſarily be devoted, not ſo much to the acquiſition of new knowledge, as to unlearn the errors to which he had been taught to give an implicit aſſent, before the dawn of reaſon and reflexion. And unleſs he ſubmit in this manner to bring all his opinions to the teſt of a ſevere examination, his ingenuity, and his learning, inſtead of enlightening the world, will only enable him to give an additional currency, and an additional authority, to eſtabliſhed errors. To attempt ſuch a ſtruggle againſt early prejudices, is, indeed, the profeſſed aim of all philoſophers; but how few are to be found, who have force of mind ſufficient for accompliſhing their object; and who, in freeing themſelves from one ſet of errors, do not allow themſelves to be carried away with another? To ſucceed in it completely, Lord Bacon ſeems to have thought, (in one of the moſt remarkable paſſages of his writings,) to be more than can well be expected from human frailty. "Nemo adhuc tanta "mentis conſtantia inventus eſt, ut decreverit, et ſibi im-"poſuerit, theorias et notiones communes penitus abolere, et "intellectum abraſum et æquum ad particularia, de integro, "applicare. Itaque illa ratio humana, quam habemus, ex multa "fide, et multo etiam caſu, nec non ex puerilibus, quas primo "hauſimus, notionibus farrago quædam eſt, et congeries. Quod "ſiquis, ætate matura, et ſenſibus integris, et mente repurgata, "ſe ad experientiam, et ad particularia de integro applicet, "de eo melius ſperandum eſt."

Nor

NOR is it merely in order to free the mind from the influence of error, that it is uſeful to examine the foundation of eſtabliſhed opinions. It is ſuch an examination alone, that, in an inquiſitive age like the preſent, can ſecure a philoſopher from the danger of unlimited ſcepticiſm. To this extreme, indeed, the complexion of the times is more likely to give him a tendency, than to implicit credulity. In the former ages of ignorance and ſuperſtition, the intimate aſſociation which had been formed, in the prevailing ſyſtems of education, between truth and error, had given to the latter an aſcendant over the minds of men, which it could never have acquired, if diveſted of ſuch an alliance. The caſe has, of late years, been moſt remarkably reverſed: the common ſenſe of mankind, in conſequence of the growth of a more liberal ſpirit of inquiry, has revolted againſt many of thoſe abſurdities, which had ſo long held human reaſon in captivity; and it was, perhaps, more than could reaſonably have been expected, that, in the firſt moments of their emancipation, philoſophers ſhould have ſtopped ſhort, at the preciſe boundary, which cooler reflection, and more moderate views, would have preſcribed. The fact is, that they have paſſed far beyond it; and that, in their zeal to eradicate prejudices, they have attempted to tear up by the roots, many of the beſt and happieſt and moſt eſſential principles of our nature. Having remarked the wonderful influence of education over the mind, they have concluded, that man is wholly a factitious being; not recollecting, that this very ſuſceptibility of education preſuppoſes certain original principles which are common to the whole ſpecies; and that, as error can only take a permanent hold of a candid mind by

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being grafted on truths, which it is unwilling or unable to eradicate; even the influence, which falſe and abſurd opinions occaſionally acquire over the belief, inſtead of being an argument for univerſal ſcepticiſm, is the moſt deciſive argument againſt it; inaſmuch as it ſhews, that there are ſome truths ſo incorporated and identified with our nature, that they can reconcile us even to the abſurdities and contradictions with which we ſuppoſe them to be inſeparably connected. The ſceptical philoſophers, for example, of the preſent age, have frequently attempted to hold up to ridicule, thoſe contemptible and puerile ſuperſtitions, which have diſgraced the creeds of ſome of the moſt enlightened nations; and which have not only commanded the aſſent, but the reverence, of men of the moſt accompliſhed underſtandings. But theſe hiſtories of human imbecility are, in truth, the ſtrongeſt teſtimonies which can be produced, to prove, how wonderful is the influence of the fundamental principles of morality over the belief; when they are able to ſanctify, in the apprehenſions of mankind, every extravagant opinion, and every unmeaning ceremony, which early education has taught us to aſſociate with them.

That implicit credulity is a mark of a feeble mind, will not be diſputed; but it may not perhaps be as generally acknowledged, that the caſe is the ſame with unlimited ſcepticiſm: on the contrary, we are ſometimes apt to aſcribe this diſpoſition to a more than ordinary vigour of intellect. Such a prejudice was by no means unnatural at that period in the hiſtory of modern Europe, when reaſon firſt began to throw off the yoke of authority; and when it unqueſtionably required a ſuperiority

riority of underſtanding, as well as of intrepidity, for an individual to reſiſt the contagion of prevailing ſuperſtition. But in the preſent age, in which the tendency of faſhionable opinions is directly oppoſite to thoſe of the vulgar; the philoſophical creed, or the philoſophical ſcepticiſm of by far the greater number of thoſe who value themſelves on an emancipation from popular errors, ariſes from the very ſame weakneſs with the credulity of the multitude: nor is it going too far to ſay, with Rouſſeau, that "He, who, in the end of the "eighteenth century, has brought himſelf to abandon all his "early principles without diſcrimination, would probably have "been a bigot in the days of the League." In the midſt of theſe contrary impulſes, of faſhionable and of vulgar prejudices, he alone evinces the ſuperiority and the ſtrength of his mind, who is able to diſentangle truth from error; and to oppoſe the clear concluſions of his own unbiaſſed faculties, to the united clamours of ſuperſtition, and of falſe philoſophy.—Such are the men, whom nature marks out to be the lights of the world; to fix the wavering opinions of the multitude, and to impreſs their own characters on that of their age.

For ſecuring the mind completely from the weakneſſes I have now been deſcribing, and enabling it to maintain a ſteady courſe of inquiry, between implicit credulity, and unlimited ſcepticiſm, the moſt important of all qualities is a ſincere and devoted attachment to truth; which ſeldom fails to be accompanied with a manly confidence in the clear concluſions of human reaſon. It is ſuch a confidence, united (as it generally is) with perſonal intrepidity, which forms what the French

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writers call force of character *; one of the rareſt endowments, it muſt be confeſſed, of our ſpecies; but which, of all endowments, is the moſt eſſential for rendering a philoſopher happy in himſelf, and a bleſſing to mankind.

THERE is, I think, good reaſon for hoping, that the ſceptical tendency of the preſent age, will be only a temporary evil. While it continues, however, it is an evil of the moſt alarming nature; and, as it extends, in general, not only to religion and morality, but, in ſome meaſure, alſo to politics, and the conduct of life, it is equally fatal to the comfort of the individual, and to the improvement of ſociety. Even in its moſt inoffenſive form, when it happens to be united with a peaceable diſpoſition and a benevolent heart, it cannot fail to have the effect of damping every active and patriotic exertion. Convinced that truth is placed beyond the reach of the human faculties; and doubtful how far the prejudices we deſpiſe, may not be eſſential to the well-being of ſociety, we reſolve to abandon completely all ſpeculative inquiries; and ſuffering ourſelves to be carried quietly along with the ſtream of popular opinions, and of faſhionable manners, determine to amuſe ourſelves, the beſt way we can, with buſineſs or pleaſure, during our ſhort paſſage through this ſcene of illuſions. But he who thinks more favourably of the human powers, and who believes that reaſon was given to man to direct him to his duty and his happineſs, will deſpiſe the ſuggeſtions of this timid philoſophy; and while he is conſcious that he is guided in his inquiries only by

* Cette conviction forte de l'eſprit, ſi elle s'unit au courage, produit la force de charactere; et on ſent combien elle doit être rare.——Vie de Turgot par le Marquis de Condorcet, partie ii. p. 130.

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the love of truth, will reſt aſſured that their reſult will be equally favourable to his own comfort, and to the beſt intereſts of mankind. What, indeed, will be the particular effects in the firſt inſtance, of that general diffuſion of knowledge, which the art of printing muſt ſooner or later produce; and of that ſpirit of reformation with which it cannot fail to be accompanied, it is beyond the reach of human ſagacity to conjecture; but unleſs we chuſe to abandon ourſelves entirely to a deſponding ſcepticiſm, we muſt hope and believe, that the progreſs of human reaſon can never be a ſource of permanent diſorder to the world; and that they alone have cauſe to apprehend the conſequences, who are led by the imperfection of our preſent inſtitutions, to feel themſelves intereſted in perpetuating the prejudices, and follies, of their ſpecies.

FROM the obſervations which have been made, it ſufficiently appears, that in order to ſecure the mind, on the one hand, from the influence of prejudice; and on the other, from a tendency to unlimited ſcepticiſm; it is neceſſary that it ſhould be able to diſtinguiſh the original and univerſal principles and laws of human nature, from the adventitious effects of local ſituation. But if, in the caſe of an individual, who has received an imperfect or erroneous education, ſuch a knowledge puts it in his power to correct, to a certain degree, his own bad habits, and to ſurmount his own ſpeculative errors; it enables him to be uſeful, in a much higher degree, to thoſe whoſe education he has an opportunity of ſuperintending from early infancy. Such, and ſo permanent, is the effect of firſt impreſſions, on the character, that although a philoſopher may ſucceed, by perſeverance, in freeing his reaſon from the prejudices with

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which he was entangled, they will ſtill retain ſome hold of his imagination, and his affections: and, therefore, however enlightened his underſtanding may be in his hours of ſpeculation, his philoſophical opinions will frequently loſe their influence over his mind, in thoſe very ſituations in which their practical aſſiſtance is moſt required:—when his temper is ſoured by misfortune; or when he engages in the purſuits of life, and expoſes himſelf to the contagion of popular errors. His opinions are ſupported merely by ſpeculative arguments; and, inſtead of being connected with any of the active principles of his nature, are counteracted and thwarted by ſome of the moſt powerful of them. How different would the caſe be, if education were conducted from the beginning with attention and judgment? Were the ſame pains taken, to impreſs truth on the mind in early infancy, that is often taken to inculcate error, the great principles of our conduct would not only be juſter than they are; but, in conſequence of the aid which they would receive from the imagination and the heart, trained to conſpire with them in the ſame direction, they would render us happier in ourſelves, and would influence our practice more powerfully and more habitually. There is ſurely nothing in error, which is more congenial to the mind than truth. On the contrary, when exhibited ſeparately, and alone to the underſtanding, it ſhocks our reaſon, and provokes our ridicule; and it is only, (as I had occaſion already to remark) by an alliance with truths, which we find it difficult to renounce, that it can obtain our aſſent, or command our reverence. What advantages, then, might be derived from a proper attention to early impreſſions and aſſociations, in giving ſupport to thoſe principles which are connected with human happineſs? The long reign of error in the

the world, and the influence it maintains, even in an age of liberal inquiry; far from being favourable to the ſuppoſition, that human reaſon is deſtined to be for ever the ſport of prejudice and abſurdity, demonſtrates the tendency which there is to permanence in eſtabliſhed opinions, and in eſtabliſhed inſtitutions; and promiſes an eternal ſtability to true philoſophy, when it ſhall once have acquired the aſcendant; and when proper means ſhall be employed to ſupport it, by a more perfect ſyſtem of education.

LET us ſuppoſe, for a moment, that this happy æra were arrived, and that all the prepoſſeſſions of childhood and youth were directed to ſupport the pure and ſublime truths of an enlightened morality. With what ardour, and with what tranſport, would the underſtanding, when arrived at maturity, proceed in the ſearch of truth; when, inſtead of being obliged to ſtruggle, at every ſtep, with early prejudices, its office was merely to add the force of philoſophical conviction, to impreſſions, which are equally delightful to the imagination, and dear to the heart! The prepoſſeſſions of childhood would, through the whole of life, be gradually acquiring ſtrength from the enlargement of our knowledge; and, in their turn, would fortify the concluſions of our reaſon, againſt the ſceptical ſuggeſtions of diſappointment or melancholy.

OUR daily experience may convince us, how ſuſceptible the tender mind is of deep impreſſions; and what important and permanent effects are produced on the characters, and the happineſs of individuals, by the caſual aſſociations formed in childhood among the various ideas, feelings, and affections, with

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with which they were habitually occupied. It is the buſineſs of education not to counteract this conſtitution of nature, but to give it a proper direction: and the miſerable conſequences to which it leads, when under an improper regulation, only ſhew, what an important inſtrument of human improvement it might be rendered, in more ſkilful hands. If it be poſſible to intereſt the imagination and the heart in favour of error, it is, at leaſt, no leſs poſſible to intereſt them in favour of truth. If it be poſſible to extinguiſh all the moſt generous and heroic feelings of our nature, by teaching us to connect the idea of them with thoſe of guilt and impiety; it is ſurely equally poſſible to cheriſh and ſtrengthen them, by eſtabliſhing the natural alliance between our duty and our happineſs. If it be poſſible for the influence of faſhion to veil the native deformity of vice, and to give to low and criminal indulgences the appearance of ſpirit, of elegance, and of gaiety; can we doubt of the poſſibility of connecting, in the tender mind, thoſe pleaſing aſſociations, with purſuits that are truly worthy and honourable?——There are few men to be found, among thoſe who have received the advantages of a liberal education, who do not retain, through life, that admiration of the heroic ages of Greece and Rome, with which the claſſical authors once inſpired them. It is, in truth, a fortunate prepoſſeſſion, on the whole, and one, of which I ſhould be ſorry to counteract the influence. But are there not others of equal importance to morality and to happineſs, with which the mind might, at the ſame period of life, be inſpired? If the firſt conceptions, for example, which an infant formed of the Deity, and its firſt moral perceptions, were aſſociated with the early impreſſions produced on the heart by the beauties of nature, or the charms of poetical deſcription, thoſe ſerious thoughts

thoughts which are reſorted to, by moſt men, merely as a ſource of conſolation in adverſity; and which, on that very account, are frequently tinctured with ſome degree of gloom, would recur ſpontaneouſly to the mind, in its beſt and happieſt hours; and would inſenſibly blend themſelves with all its pureſt and moſt refined enjoyments.

In thoſe parts of Europe, where the prevailing opinions involve the greateſt variety of errors and corruptions, it is, I believe, a common idea with many reſpectable and enlightened men, that, in every country, it is moſt prudent to conduct the religious inſtruction of youth upon the plan which is preſcribed by the national eſtabliſhment; in order that the pupil, according to the vigour or feebleneſs of his mind, may either ſhake off, in future life, the prejudices of the nurſery, or die in the popular perſuaſion. This idea, I own, appears to me to be equally ill-founded and dangerous. If religious opinions have, as will not be diſputed, a powerful influence on the happineſs, and on the conduct, of mankind, does not humanity require of us, to reſcue as many victims as poſſible from the hands of bigotry; and to ſave them from the cruel alternative, of remaining under the gloom of a depreſſing ſuperſtition, or of being diſtracted by a perpetual conflict between the heart and the underſtanding?——It is an enlightened education alone, that, in moſt countries of Europe, can ſave the young philoſopher from that anxiety and deſpondence, which every man of ſenſibility, who, in his childhood, has imbibed the popular opinions, muſt neceſſarily experience, when he firſt begins to examine their foundation; and, what is of ſtill greater importance, which can

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ſave him, during life, from that occaſional ſcepticiſm, to which all men are liable, whoſe ſyſtems fluctuate with the inequalities of their ſpirits, and the variations of the atmoſphere.

I SHALL conclude this ſubject, with remarking, that, although in all moral and religious ſyſtems, there is a great mixture of important truth; and although it is, in conſequence of this alliance, that errors and abſurdities are enabled to preſerve their hold of the belief, yet it is commonly found, that, in proportion as an eſtabliſhed creed is complicated in its dogmas and in its ceremonies, and in proportion to the number of acceſſory ideas which it has grafted upon the truth, the more difficult is it, for thoſe who have adopted it in childhood, to emancipate themſelves completely from its influence; and, in thoſe caſes in which they at laſt ſucceed, the greater is their danger of abandoning, along with their errors, all the truths which they had been taught to connect with them. The Roman catholic ſyſtem is ſhaken off with much greater difficulty, than thoſe which are taught in the reformed churches; but when it loſes its hold of the mind, it much more frequently prepares the way for unlimited ſcepticiſm. The cauſes of this I may perhaps have an opportunity of pointing out, in treating of the aſſociation of ideas.

I HAVE now finiſhed all that I think neceſſary to offer, at preſent, on the application of the philoſophy of mind to the ſubject of education. To ſome readers, I am afraid, that what I have advanced on the ſubject, will appear to border upon enthuſiaſm; and I will not attempt to juſtify myſelf againſt the

charge. I am well aware of the tendency, which ſpeculative men ſometimes have, to magnify the effects of education, as well as to entertain too ſanguine views of the improvement of the world; and I am ready to acknowledge, that there are inſtances of individuals, whoſe vigour of mind is ſufficient to overcome every thing that is pernicious in their early habits: but I am fully perſuaded, that theſe inſtances are rare; and that, by far the greater part of mankind continue, through life, to purſue the ſame track into which they have been thrown, by the accidental circumſtances of ſituation, inſtruction, and example.

PART SECOND.

SECTION II.

Continuation of the ſame Subject.

THE remarks which have been hitherto made, on the utility of the philoſophy of the human mind, are of a very general nature, and apply equally to all deſcriptions of men. Beſides, however, theſe more obvious advantages of the ſtudy, there are others, which, though leſs ſtriking, and leſs extenſive in their application, are nevertheleſs, to ſome particular claſſes of individuals, of the higheſt importance. Without pretending to exhauſt the ſubject, I ſhall offer a few detached obſervations upon it, in this ſection.

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I ALREADY took notice, in general terms, of the common relation which all the different branches of our knowledge bear to the philoſophy of the human mind. In conſequence of this relation, it not only forms an intereſting object of curioſity to literary men of every denomination; but, if ſucceſsfully proſecuted, it cannot fail to furniſh uſeful lights for directing their inquiries; whatever the nature of the ſubjects may be, which happen to engage their attention.

IN order to be ſatisfied of the juſtneſs of this obſervation, it is ſufficient to recollect, that to the philoſophy of the mind are to be referred, all our inquiries concerning the diviſions and the claſſifications of the objects of human knowledge; and alſo, all the various rules, both for the inveſtigation, and the communication, of truth. Theſe general views of ſcience, and theſe general rules of method, ought to form the ſubjects of a rational and uſeful logic; a ſtudy, undoubtedly, in itſelf of the greateſt importance and dignity, but in which leſs progreſs has hitherto been made than is commonly imagined.

I SHALL endeavour to illuſtrate, very briefly, a few of the advantages which might be expected to reſult from ſuch a ſyſtem of logic, if properly executed.

I. AND, in the firſt place, it is evident that it would be of the higheſt importance in all the ſciences, (in ſome of them, indeed, much more than in others,) to exhibit a preciſe and ſteady idea of the objects which they preſent to our inquiry.—— What was the principal circumſtance which contributed to miſ-

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lead the ancients, in their phyſical reſearches? Was it not their confuſed and wavering notions about the particular claſs of truths, which it was their buſineſs to inveſtigate? It was owing to this, that they were led to neglect the obvious phenomena and laws of moving bodies; and to indulge themſelves in conjectures about the efficient cauſes of motion, and the nature of thoſe minds, by which they conceived the particles of matter to be animated; and that they ſo often blended the hiſtory of facts, with their metaphyſical ſpeculations. In the preſent ſtate of ſcience, indeed, we are not liable to ſuch miſtakes in natural philoſophy; but it would be difficult to mention any other branch of knowledge, which is entirely exempted from them. In metaphyſics, I might almoſt ſay, they are at the bottom of all our controverſies. In the celebrated diſpute, for example, which has been ſo long carried on, about the explanation given by the ideal theory of the phenomena of perception, the whole difficulty aroſe from this, that philoſophers had no preciſe idea of the point they wiſhed to aſcertain; and now, that the controverſy has been brought to a concluſion, (as I think all men of candour muſt confeſs it to have been by Dr. Reid,) it will be found, that his doctrine on the ſubject throws no light whatever, on what was generally underſtood to be the great object of inquiry; I mean, on the mode of communication between the mind and the material world: and, in truth, amounts only to a preciſe deſcription of the fact, ſtripped of all hypotheſis, and ſtated in ſuch a manner as to give us a diſtinct view of the inſurmountable limits which nature has in this inſtance preſcribed to our curioſity. The ſame obſervation may be made, on the reaſonings of

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of this profound and original author, with reſpect to ſome metaphyſical queſtions that had been ſtarted on the ſubject of viſion; in particular, concerning the cauſe of our ſeeing objects ſingle with two eyes, and our ſeeing objects erect, by means of inverted images on the retina.

If we were to examine, in like manner, the preſent ſtate of morals, of juriſprudence, of politics, and of philoſophical criticiſm; I believe, we ſhould find, that the principal circumſtance which retards their progreſs, is the vague and indiſtinct idea, which thoſe who apply to the ſtudy of them have formed to themſelves of the objects of their reſearches. Were theſe objects once clearly defined, and the proper plan of inquiry for attaining them illuſtrated by a few unexceptionable models, writers of inferior genius would be enabled to employ their induſtry to much more advantage; and would be prevented from adding to that rubbiſh, which, in conſequence of the ill-directed ingenuity of our predeceſſors, obſtructs our progreſs in the purſuit of truth.

As a philoſophical ſyſtem of logic would aſſiſt us in our particular ſcientific inveſtigations, by keeping ſteadily in our view the attainable objects of human curioſity; ſo, by exhibiting to us the relation in which they all ſtand to each other, and the relation which they all bear to what ought to be their common aim, the advancement of human happineſs, it would have a tendency to confine induſtry and genius to inquiries which are of real practical utility; and would communicate a dignity

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to the moſt ſubordinate purſuits, which are in any reſpect ſubſervient to ſo important a purpoſe. When our views are limited to one particular ſcience, to which we have been led to devote ourſelves by taſte or by accident, the courſe of our ſtudies reſembles the progreſs of a traveller through an unknown country; whoſe wanderings, from place to place, are determined merely by the impulſe of occaſional curioſity; and whoſe opportunities of information muſt neceſſarily be limited to the objects which accidentally preſent themſelves to his notice. It is the philoſophy of the mind alone, which, by furniſhing us with a general map of the field of human knowledge, can enable us to proceed with ſteadineſs, and in an uſeful direction; and while it gratifies our curioſity, and animates our exertions, by exhibiting to us all the various bearings of our journey, can conduct us to thoſe eminences from whence the eye may wander over the vaſt and unexplored regions of ſcience. Lord Bacon was the firſt perſon who took this comprehenſive view of the different departments of ſtudy; and who pointed out, to all the claſſes of literary men, the great end to which their labours ſhould conſpire; the multiplication of the ſources of human enjoyment, and the extenſion of man's dominion over nature. Had this object been kept ſteadily in view by his followers, their diſcoveries, numerous and important as they have been, would have advanced with ſtill greater rapidity, and would have had a much more extenſive influence on the practical arts of life *.

FROM

* Omnium autem graviſſimus error in deviatione ab ultimo doctrinarum fine conſiſtit. Appetunt enim homines ſcientiam, alii ex inſita curioſitate et irrequietâ;

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FROM ſuch a ſyſtem of logic, too, important aſſiſtance might be expected, for reforming the eſtabliſhed plan of public or academical education. It is melancholy to reflect on the manner in which this is carried on, in moſt, perhaps, I might ſay, in all the countries of Europe; and that, in an age of comparative light and liberality, the intellectual and moral characters of youth ſhould continue to be formed on a plan deviſed by men, who were not only ſtrangers to the buſineſs of the world, but who felt themſelves intereſted in oppoſing the progreſs of uſeful knowledge.

FOR accompliſhing a reformation in the plan of academical ſtudy, on rational and ſyſtematical principles, it is neceſſary, in the firſt place, to conſider the relation in which the different branches of literature, and the different arts and ſciences ſtand to each other, and to the practical purpoſes of life: and ſecondly, to conſider them in relation to the human mind, in order to determine the arrangement, beſt fitted for unfolding and maturing its faculties. Many valuable hints towards ſuch a work may be collected from Lord Bacon's writings.

II. ANOTHER very important branch of a rational ſyſtem of logic (as I had occaſion already to obſerve) ought to be; to lay

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quietâ; alii animi cauſâ et delectationis, alii exiſtimationis gratiâ: alii contentionis ergo, atque ut in differendo ſuperiores ſint: plerique propter lucrum et victum: pauciſſimi, ut donum rationis, divinitus datum, in uſus humani generis impendant.——Hoc enim illud eſt, quod revera doctrinam atque artes condecoraret, et attolleret, ſi contemplatio, et actio, arctiore quam adhuc vinculo copularentur. De Aug. Scient. lib. i.

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down the rules of inveſtigation which it is proper to follow in the different ſciences. In all of theſe, the faculties of the underſtanding are the inſtruments with which we operate; and without a previous knowledge of their nature, it is impoſſible to employ them to the beſt advantage. In every exerciſe of our reaſoning and of our inventive powers, there are general laws which regulate the progreſs of the mind; and when once theſe laws are aſcertained, they enable us to ſpeculate and to invent, for the future, with more ſyſtem, and with a greater certainty of ſucceſs.—In the mechanical arts, it is well known, how much time and ingenuity are miſapplied, by thoſe who acquire their practical ſkill, by their own trials, undirected by the precepts or example of others. What we call the rules of an art, are merely a collection of general obſervations, ſuggeſted by long experience, with reſpect to the moſt compendious and effectual means of performing every different ſtep of the proceſſes which the art involves. In conſequence of ſuch rules, the artiſt is enabled to command the ſame ſucceſs in all his operations, for which the unſkilled workman muſt truſt to an happy combination of accidental circumſtances; the miſapplications, too, of the labour of one race are ſaved to the next; and the acquiſition of practical addreſs is facilitated, by confining its exertions to one direction.——The analogy is perfect, in thoſe proceſſes which are purely intellectual; and to regulate which, is the great object of logic. In the caſe of individuals, who have no other guide to direct them in their inquiries than their own natural ſagacity, much time and ingenuity muſt inevitably be thrown away, in every exertion of the inventive powers. In proportion, however, to

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the degree of their experience and obſervation, the number of theſe miſapplications will diminiſh; and the power of invention will be enabled to proceed with more certainty and ſteadineſs to its object. The misfortune is, that as the aids, which the underſtanding derives from experience, are ſeldom recorded in writing, or even deſcribed in words, every ſucceeding inquirer finds himſelf, at the commencement of his philoſophical purſuits, obliged to ſtruggle with the ſame diſadvantages which had retarded the progreſs of his predeceſſors. If the more important practical rules, which habits of inveſtigation ſuggeſt to individuals, were diligently preſerved, each generation would be placed in circumſtances more favourable to invention than the preceding; and the progreſs of knowledge, inſtead of cramping original genius, would aſſiſt and direct its exertions. In the infancy of literature, indeed, its range may be more unbounded, and its accidental excurſions may excite more aſtoniſhment, than in a cultivated and enlightened age; but it is only in ſuch an age, that inventive genius can be trained by rules founded on the experience of our predeceſſors, in ſuch a manner as to inſure the gradual and regular improvement of ſcience. So juſt is the remark of Lord Bacon: "Certo ſciant "homines, artes inveniendi ſolidas et veras adoleſcere et incre- "menta ſumere cum ipſis inventis."

THE analogy between the mechanical arts, and the operations of ſcientific invention, might perhaps be carried farther. In the former, we know how much the natural powers of man have been aſſiſted, by the uſe of tools and inſtruments. Is it not poſſible to deviſe, in like manner, certain aids to our intellectual faculties?

THAT

THAT ſuch a query is not altogether chimerical, appears from the wonderful effects of algebra (which is preciſely ſuch an inſtrument of thought, as I have been now alluding to) in facilitating the inquiries of modern mathematicians. Whether it might not be poſſible to realiſe a project which Leibnitz has ſomewhere mentioned, of introducing a ſimilar contrivance into other branches of knowledge, I ſhall not take upon me to determine; but that this idea has at leaſt ſome plauſibility, muſt, I think, be evident to thoſe who have reflected on the nature of the general terms which abound more or leſs in every cultivated language; and which may be conſidered as one ſpecies of inſtrumental aid which art has diſcovered to our intellectual powers. From the obſervations which I am afterwards to make, it will appear, that, without general terms, all our reaſonings muſt neceſſarily have been limited to particulars; and, conſequently, it is owing to the uſe of theſe, that the philoſopher is enabled to ſpeculate concerning claſſes of objects, with the ſame facility with which the ſavage or the peaſant ſpeculates concerning the individuals of which they are compoſed. The technical terms, in the different ſciences, render the appropriated language of philoſophy a ſtill more convenient inſtrument of thought, than thoſe languages which have originated from popular uſe; and in proportion as theſe technical terms improve in point of preciſion and comprehenſiveneſs, they will contribute to render our intellectual progreſs more certain and more rapid. "While engaged" (ſays Mr. Lavoiſier) "in the compoſition of my Elements of "Chemiſtry, I perceived, better than I had ever done "before, the truth of an obſervation of Condillac, that we "think only through the medium of words; and that lan-

Introduction. "guages are true analytical methods. Algebra, which, of all "our modes of expreſſion, is the moſt ſimple, the moſt exact, "and the beſt adapted to its purpoſe, is, at the ſame time, a "language and an analytical method. The art of reaſoning is "nothing more than a language well arranged." The influence which theſe very enlightened and philoſophical views have already had on the doctrines of chemiſtry, cannot fail to be known to moſt of my readers.

THE foregoing remarks, in ſo far as they relate to the poſſibility of aſſiſting our reaſoning and inventive powers, by new inſtrumental aids, may perhaps appear to be founded too much upon theory; but this objection cannot be made to the reaſonings I have offered on the importance of the ſtudy of method.—To the juſtneſs of theſe, the whole hiſtory of ſcience bears teſtimony; but more eſpecially, the hiſtories of Phyſics and of pure Geometry; which afford ſo remarkable an illuſtration of the general doctrine, as can ſcarcely fail to be ſatisfactory, even to thoſe who are the moſt diſpoſed to doubt the efficacy of art in directing the exertions of genius.

WITH reſpect to the former, it is ſufficient to mention the wonderful effects which the writings of Lord Bacon have produced, in accelerating its progreſs. The philoſophers, who flouriſhed before his time, were, undoubtedly, not inferior to their ſucceſſors, either in genius or induſtry: but their plan of inveſtigation was erroneous; and their labours have produced only a chaos of fictions and abſurdities. The illuſtrations which his works contain, of the method of induction, general as the terms are, in which they are expreſſed, have gradually turned the

the attention of the moderns to the rules of philoſophiſing; and have led the way to thoſe important and ſublime diſcoveries in phyſics, which reflect ſo much honour on the preſent age.

THE rules of philoſophiſing, however, even in phyſics, have never yet been laid down with a ſufficient degree of preciſion, minuteneſs, or method; nor have they ever been ſtated and illuſtrated in ſo clear and popular a manner, as to render them intelligible to the generality of readers. The truth, perhaps, is; that the greater part of phyſical inquirers have derived what knowledge of them they poſſeſs, rather from an attention to the excellent models of inveſtigation, which the writings of Newton exhibit, than from any of the ſpeculations of Lord Bacon, or his commentators: and, indeed, ſuch is the incapacity of moſt people for abſtract reaſoning, that I am inclined to think, even if the rules of inquiry were delivered in a perfectly complete and unexceptionable form, it might ſtill be expedient to teach them to the majority of ſtudents, rather by examples, than in the form of general principles. But it does not therefore follow, that an attempt to illuſtrate and to methodize theſe rules, would be uſeleſs; for it muſt be remembered, that, although an original and inventive genius, like that of Newton, be ſufficient to eſtabliſh a ſtandard for the imitation of his age, yet, that the genius of Newton himſelf was encouraged and led by the light of Bacon's philoſophy.

THE uſe which the ancient Greek geometers made of their *analyſis*, affords an additional illuſtration of the utility of method in guiding ſcientific invention. To facilitate the ſtudy of this

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this ſpecies of inveſtigation, they wrote no leſs than thirty-three preparatory books; and they conſidered an addreſs, in the practice of it, (or, as MARINUS calls it, a *δυναμις αναλυτικη*) as of much more value, than an extenſive acquaintance with the principles of the ſcience *. Indeed, it is well known, to every one who is at all converſant with geometrical inveſtigations, that although it may be poſſible for a perſon, without the aſſiſtance of the method of analyſis, to ſtumble accidentally on a ſolution, or on a demonſtration; yet it is impoſſible for him to poſſeſs a juſt confidence in his own powers, or to carry on a regular plan of invention and diſcovery. It is well known, too, that an acquaintance with this method brings geometers much more nearly upon a level with each other, than they would be otherwiſe: not that it is poſſible, by any rules, to ſuperſede, entirely, ingenuity and addreſs; but, becauſe, in in conſequence of the uniformity of the plan on which the method proceeds, experience communicates a certain dexterity in the uſe of it; which muſt in time give to a very ordinary degree of ſagacity, a ſuperiority, on the whole, to the greateſt natural ingenuity, unaſſiſted by rule †.

To

* Μειζον εστι το δυναμιν αναλυτικην κτησασθαι, του πολλας αποδειξεις των επι μερους εχειν.

† "Mathematica multi ſciunt, matheſin pauci. Aliud eſt enim noſſe propoſitiones aliquot, et nonnullas ex iis obvias elicere, caſu potius quam certa aliqua diſcurrendi norma, aliud ſcientiæ ipſius naturam ac indolem perſpectam habere, in ejus ſe adyta penetrare, et ab univerſalibus inſtructum eſſe præceptis, quibus theoremata ac problemata innumera excogitandi, eademque demonſtrandi facilitas comparetur. Ut enim pictorum vulgus prototypon ſæpe ſæpius exprimendo, quendam pingendi uſum, nullam vero pictoriæ artis quam optica ſuggerit ſcientiam adquirit, ita multi, lectis Euclidis et aliorum geometrarum libris, eorum

To theſe obſervations, I believe, I may add, that, after all that was done by the Greek philoſophers to facilitate mathematical invention, many rules ſtill remain to be ſuggeſted, which might be of important uſe, even in pure geometry. A variety of ſuch occur to every experienced mathematician, in the courſe of his inquiries, although, perhaps, he may not be at the trouble to ſtate them to himſelf in words; and it would plainly have ſaved him much expence of time and thought, beſide enabling him to conduct his reſearches on a more regular plan, if he had been taught them ſyſtematically at the commencement of his ſtudies. The more varied, abſtruſe, and general inveſtigations of the moderns, ſtand in need, in a much greater degree, of the guidance of philoſophical principles; not only for enabling us to conduct, with ſkill, our particular reſearches, but for directing us to the different methods of reaſoning, to which we ought to have recourſe on different occaſions. A collection of ſuch rules would form, what might be called with propriety, the logic of mathematics; and would probably contribute greatly to the advancement of all thoſe branches of knowledge, to which mathematical learning is ſubſervient.

THE obſervations which have been now made, on the importance of method in conducting phyſical and mathematical

imitatione fingere propoſitiones aliquas ac demonſtrare ſolent, ipſam tamen ſecretiſſimam difficiliorum theorematum ac problematum ſolvendi methodum prorſus ignorant."

Joannis de la Faille Theoremata de Centro Gravitatis, in præfat.—Antwerpiæ, 1632.

reſearches,

Introduction. reſearches, particularly thoſe which relate to the laſt of theſe ſubjects, will not apply literally to our inquiries in metaphyſics, morals, or politics; becauſe, in theſe ſciences, our reaſonings always conſiſt of a comparatively ſmall number of intermediate ſteps; and the obſtacles which retard our progreſs, do not, as in mathematics, ariſe from the difficulty of finding media of compariſon among our ideas. Not, that theſe obſtacles are leſs real, or more eaſily ſurmounted: on the contrary, it ſeems to require a ſtill rarer combination of talents to ſurmount them; for how ſmall is the number of individuals, who are qualified to think juſtly on metaphyſical, moral, or political ſubjects; in compariſon of thoſe, who may be trained by practice to follow the longeſt proceſſes of mathematical reaſoning. From what theſe obſtacles ariſe, I ſhall not inquire particularly at preſent. Some of the more important of them may be referred to the imperfections of language; to the difficulty of annexing preciſe and ſteady ideas to our words; to the difficulty, in ſome caſes, of conceiving the ſubjects of our reaſoning; and, in others, of diſcovering, and keeping in view, all the various circumſtances upon which our judgment ought to proceed; and above all, to the prejudices which early impreſſions and aſſociations create, to warp our opinions.—To illuſtrate theſe ſources of error, in the different ſciences which are liable to be affected by them, and to point out the moſt effectual means for guarding againſt them, would form another very intereſting article, in a philoſophical ſyſtem of logic.

THE method of communicating to others, the principles of the different ſciences, has been as much neglected by the writers

writers on logic, as the rules of inveſtigation and diſcovery; and yet, there is certainly no undertaking whatever, in which their aſſiſtance is more indiſpenſibly requiſite. The firſt principles of all the ſciences are intimately connected with the philoſophy of the human mind; and it is the province of the logician, to ſtate theſe in ſuch a manner, as to lay a ſolid foundation for the ſuperſtructures which others are to rear.—It is in ſtating ſuch principles, accordingly, that elementary writers are chiefly apt to fail. How unſatisfactory, for example, are the introductory chapters in moſt ſyſtems of natural philoſophy; not in conſequence of any defect of phyſical or of mathematical knowledge in their authors, but in conſequence of a want of attention to the laws of human thought, and to the general rules of juſt reaſoning! The ſame remark may be extended to the form, in which the elementary principles of many of the other ſciences are commonly exhibited; and, if I am not miſtaken, this want of order, among the firſt ideas which they preſent to the mind, is a more powerful obſtacle to the progreſs of knowledge, than is generally imagined.

I SHALL only obſerve farther, with reſpect to the utility of the philoſophy of mind, that as there are ſome arts, in which we not only employ the intellectual faculties as inſtruments, but operate on the mind as a ſubject; ſo, to thoſe individuals who aim at excellence in ſuch purſuits, the ſtudies I have now been recommending are, in a more peculiar manner, intereſting and important. In poetry, in painting, in eloquence, and in all the other fine arts, our ſucceſs depends on the ſkill with which we are able to adapt the efforts of our genius to

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the human frame; and it is only on a philoſophical analyſis of the mind, that a ſolid foundation can be laid for their farther improvement. Man, too, is the ſubject on which the practical moraliſt and the enlightened ſtateſman have to operate. Of the former, it is the profeſſed object to engage the attention of individuals to their own beſt intereſts; and to allure them to virtue and happineſs, by every conſideration that can influence the underſtanding, the imagination, or the heart. To the latter, is aſſigned the ſublimer office of ſeconding the benevolent intentions of Providence in the adminiſtration of human affairs; to diffuſe as widely and equally as poſſible, among his fellow-citizens, the advantages of the ſocial union; and, by a careful ſtudy of the conſtitution of man, and of the circumſtances in which he is placed, to modify the political order, in ſuch a manner as may allow free ſcope and operation to thoſe principles of intellectual and moral improvement, which nature has implanted in our ſpecies.

In all theſe caſes, I am very ſenſible, that the utility of ſyſtematical rules has been called in queſtion by philoſophers of note; and that many plauſible arguments in ſupport of their opinion, may be derived from the ſmall number of individuals who have been regularly trained to eminence in the arts, in compariſon of thoſe who have been guided merely by untutored genius, and the example of their predeceſſors. I know, too, that it may be urged with truth, that rules have, in ſome caſes, done more harm than good; and have miſled, inſtead of directing, the natural exertions of the mind. But, in all ſuch inſtances, in which philoſophical principles have failed

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in producing their intended effect, I will venture to aſſert, that they have done ſo, either in conſequence of errors, which were accidentally blended with them; or, in conſequence of their poſſeſſing only that ſlight and partial influence over the genius, which enabled them to derange its previouſly acquired habits; without regulating its operations, upon a ſyſtematical plan, with ſteadineſs and efficacy. In all the arts of life, whether trifling or important, there is a certain degree of ſkill, which may be attained by our untutored powers, aided by imitation; and this ſkill, inſtead of being perfected by rules, may, by means of them, be diminiſhed or deſtroyed, if theſe rules are partially and imperfectly apprehended; or even if they are not ſo familiarized to the underſtanding, as to influence its exertions uniformly and habitually. In the caſe of a muſical performer, who has learned his art merely by the ear, the firſt effects of ſyſtematical inſtruction are, I believe, always unfavourable. The effect is the ſame, of the rules of elocution, when firſt communicated to one who has attained, by his natural taſte and good ſenſe, a tolerable propriety in the art of reading. But it does not follow from this, that, in either of theſe arts, rules are uſeleſs. It only follows, that, in order to unite eaſe and grace with correctneſs, and to preſerve the felicities of original genius, amidſt thoſe reſtraints which may give them an uſeful direction, it is neceſſary that the acquiſitions of education ſhould, by long and early habits, be rendered, in ſome meaſure, a ſecond nature.——The ſame obſervations will be found to apply, with very ſlight alterations, to arts of more ſerious importance.—In the art of legiſlation, for example, there is a certain degree of ſkill, which may be acquired merely from the routine of buſineſs; and when once a poli-

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a politician has been formed, in this manner, among the details of office, a partial ſtudy of general principles, will be much more likely to lead him aſtray, than to enlighten his conduct. But there is nevertheleſs a ſcience of legiſlation, which the details of office, and the intrigues of popular aſſemblies, will never communicate; a ſcience, of which the principles muſt be ſought for in the conſtitution of human nature, and in the general laws which regulate the courſe of human affairs; and which, if ever, in conſequence of the progreſs of reaſon, philoſophy ſhould be enabled to aſſume that aſcendant in the government of the world, which has hitherto been maintained by accident, combined with the paſſions and caprices of a few leading individuals, may, perhaps, produce more perfect and happy forms of ſociety, than have yet been realized in the hiſtory of mankind.

I HAVE thus endeavoured to point out, and illuſtrate, a few of the moſt important purpoſes to which the philoſophy of the human mind is ſubſervient. It will not, however, I flatter myſelf, be ſuppoſed by any of my readers, that I mean to attempt a ſyſtematical work, on all, or any of the ſubjects I have now mentioned; the moſt limited of which, would furniſh matter for many volumes. What I have aimed at, has been, to give, in the firſt place, as diſtinct and complete an analyſis as I could, of the principles, both intellectual and active, of our nature; and, in the ſecond place, to illuſtrate, as I proceed, the application of theſe general laws of the human conſtitution, to the different claſſes of phenomena which reſult from them. In the ſelection

of theſe phenomena, although I have ſometimes been guided chiefly by the curioſity of the moment, or the accidental courſe of my own ſtudies; yet, I have had it in view, to vary, as far as poſſible, the nature of my ſpeculations, in order to ſhew how numerous and different the applications are, of which this philoſophy is ſuſceptible. It will not, therefore, I hope, be objected to me, that I have been guilty of a blameable violation of unity in the plan of my work, till it be conſidered how far ſuch a violation was uſeful for accompliſhing the purpoſes for which I write. One ſpecies of unity, I am willing to believe, an attentive reader will be able to trace in it; I mean, that uniformity of thought and deſign, "which" (as Butler well remarks) "we may always expect to meet with in the compoſi-"tions of the ſame author, when he writes with ſimplicity, and "in earneſt."

ELEMENTS

OF THE

PHILOSOPHY

OF THE

HUMAN MIND.

CHAPTER FIRST.

Of the Powers of External Perception.

SECTION I.

Of the Theories which have been formed by Philoſophers, to explain the Manner in which the MIND *perceives external Objects.*

CHAP. I.

AMONG the various phenomena which the human mind preſents to our view, there is none more calculated to excite our curioſity and our wonder, than the communication which is carried on between the ſentient, thinking, and active principle within us, and the material objects with which we are ſurrounded. How little ſoever the bulk of mankind may be diſpoſed to attend to ſuch inquiries, there is ſcarcely a perſon to be found, who has not occaſionally turned his thoughts to that myſterious

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myſterious influence, which the will poſſeſſes over the members of the body; and to thoſe powers of perception, which ſeem to inform us, by a ſort of inſpiration, of the various changes which take place in the external univerſe. Of thoſe who receive the advantages of a liberal education, there are perhaps few, who paſs the period of childhood, without feeling their curioſity excited by this incomprehenſible communication between mind and matter. For my own part, at leaſt, I cannot recollect the date of my earlieſt ſpeculations on the ſubject.

It is to the phenomena of perception alone, that I am to confine myſelf in the following eſſay; and even with reſpect to theſe, all that I propoſe, is to offer a few general remarks on ſuch of the common miſtakes concerning them, as may be moſt likely to miſlead us in our future inquiries. Such of my readers as wiſh to conſider them more in detail, will find ample ſatisfaction in the writings of Dr. Reid.

In conſidering the phenomena of perception, it is natural to ſuppoſe, that the attention of philoſophers would be directed, in the firſt inſtance, to the ſenſe of ſeeing. The variety of information and of enjoyment we receive by it; the rapidity with which this information and enjoyment are conveyed to us; and above all, the intercourſe it enables us to maintain with the more diſtant part of the univerſe, cannot fail to give it, even in the apprehenſion of the moſt careleſs obſerver, a pre-eminence over all our other perceptive faculties. Hence it is, that the various theories, which have been formed to explain the operations of our ſenſes, have a more immediate reference to that

that of ſeeing; and that the greater part of the metaphyſical language, concerning perception in general, appears evidently, from its etymology, to have been ſuggeſted by the phenomena of viſion. Even when applied to this ſenſe, indeed, it can at moſt amuſe the fancy, without conveying any preciſe knowledge; but, when applied to the other ſenſes, it is altogether abſurd and unintelligible.

It would be tedious and uſeleſs, to conſider particularly, the different hypotheſes which have been advanced upon this ſubject. To all of them, I apprehend, the two following remarks will be found applicable: Firſt, that, in the formation of them, their authors have been influenced by ſome general maxims of philoſophiſing, borrowed from phyſics; and Secondly, that they have been influenced by an indiſtinct, but deep rooted, conviction, of the immateriality of the ſoul; which, although not preciſe enough to point out to them the abſurdity of attempting to illuſtrate its operations by the analogy of matter, was yet ſufficiently ſtrong, to induce them to keep the abſurdity of their theories as far as poſſible out of view, by alluſions to thoſe phyſical facts, in which the diſtinctive properties of matter are the leaſt groſsly and palpably expoſed to our obſervation. To the former of theſe circumſtances, is to be aſcribed, the general principle, upon which all the known theories of perception proceed; that, in order to explain the intercourſe between the mind and diſtant objects, it is neceſſary to ſuppoſe the exiſtence of ſomething intermediate, by which its perceptions are produced; to the latter, the various meta-

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phorical expreſſions of *ideas*, *ſpecies*, *forms*, *ſhadows*, *phantaſms*, *images*; which, while they amuſed the fancy with ſome remote analogies to the objects of our ſenſes, did not directly revolt our reaſon, by preſenting to us any of the tangible qualities of body.

"IT was the doctrine of ARISTOTLE," (ſays Dr. REID,) "that, as our ſenſes cannot receive external material objects "themſelves, they receive their ſpecies; that is, their images or "forms, without the matter; as wax receives the form of the "ſeal, without any of the matter of it. Theſe images or forms, "impreſſed upon the ſenſes, are called *ſenſible ſpecies*; and are "the objects only of the ſenſitive part of the mind: but by va- "rious, internal powers, they are retained, refined, and ſpi- "ritualized, ſo as to become objects of memory and imagina- "tion; and, at laſt, of pure intellection. When they are "objects of memory and of imagination, they get the name "of *phantaſms*. When, by farther refinement, and being "ſtripped of their particularities, they become objects of ſcience, "they are called *intelligible ſpecies*: ſo that every immediate "object, whether of ſenſe, of memory, of imagination, or "of reaſoning, muſt be ſome phantaſm, or ſpecies, in the mind "itſelf.

"THE followers of Ariſtotle, eſpecially the ſchoolmen, made "great additions to this theory; which the author himſelf "mentions very briefly, and with an appearance of reſerve. "They entered into large diſquiſitions with regard to the ſen- "ſible ſpecies, what kind of things they are; how they are ſent "forth

" forth by the object, and enter by the organs of the ſenſes; " how they are preſerved, and refined by various agents, called " internal ſenſes, concerning the number and offices of which " they had many controverſies *."

THE Platoniſts, too, although they denied the great doctrine of the Peripatetics, that all the objects of human underſtanding enter at firſt by the ſenſes; and maintained, that there exiſt eternal and immutable ideas, which were prior to the objects of ſenſe, and about which all ſcience was employed; yet appear to have agreed with them in their notions concerning the mode in which external objects are perceived. This Dr. Reid infers, partly from the ſilence of Ariſtotle about any difference between himſelf and his maſter upon this point; and partly from a paſſage in the ſeventh book of Plato's Republic; in which he compares the proceſs of the mind in perception, to that of a perſon in a cave, who ſees not external objects themſelves, but only their ſhadows †.

" TWO thouſand years after Plato," (continues Dr. Reid,) " Mr. Locke, who ſtudied the operations of the human mind " ſo much, and with ſo great ſucceſs, repreſents our manner of " perceiving external objects, by a ſimilitude very much re- " ſembling that of the cave.—" Methinks," ſays he, " the un- " derſtanding is not much unlike a cloſet wholly ſhut from " light, with only ſome little opening left, to let in external " viſible reſemblances or ideas of things without. Would the

* Eſſays on the intellectual Powers of Man, p. 25.

† Ibid. p. 99.

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" pictures coming into ſuch a dark room but ſtay there, and lie " ſo orderly as to be found upon occaſion, it would very much " reſemble the underſtanding of a man, in reference to all ob- " jects of ſight, and the ideas of them *."

" PLATO's ſubterranean cave, and Mr. Locke's dark cloſet, " may be applied with eaſe to all the ſyſtems of perception that " have been invented: for they all ſuppoſe, that we perceive " not external objects immediately; and that the immediate " objects of perception, are only certain ſhadows of the external " objects. Thoſe ſhadows, or images, which we immediately " perceive, were by the ancients called *ſpecies*, *forms*, *phantaſms*. " Since the time of Des Cartes, they have commonly been called " *ideas* †; and by Mr. Hume, *impreſſions*. But all philoſo- " phers, from Plato to Mr. Hume, agree in this, that we do " not perceive external objects immediately; and that the imme- " diate object of perception muſt be ſome image preſent to " the mind." On the whole, Dr. Reid remarks, " that in " their ſentiments concerning perception, there appears an " uniformity, which rarely occurs upon ſubjects of ſo abſtruſe a " nature ‡."

THE very ſhort and imperfect review we have now taken, of the common theories of perception, is almoſt ſufficient, without any commentary, to eſtabliſh the truth of the two general obſervations formerly made; for they all evidently proceed on a ſuppoſition, ſuggeſted by the phenomena of phyſics, that there

* Locke on Human Underſtanding, book ii. chap. xi. § 17.

† See Note [B]. ‡ Reid, p. 116, 117.

muſt of neceſſity exiſt ſome medium of communication between the objects of perception and the percipient mind; and they all indicate a ſecret conviction in their authors, of the eſſential diſtinction between mind and matter; which, although not rendered, by reflexion, ſufficiently preciſe and ſatisfactory, to ſhew them the abſurdity of attempting to explain the mode of their communication; had yet ſuch a degree of influence on their ſpeculations, as to induce them to exhibit their ſuppoſed medium under as myſterious and ambiguous a form as poſſible, in order that it might remain doubtful, to which of the two predicaments, of body or mind, they meant that it ſhould be referred. By refining away the groſſer qualities of matter; and by alluſions to ſome of the moſt aerial and magical appearances it aſſumes, they endeavoured, as it were, to ſpiritualize the nature of their medium; while, at the ſame time, all their language concerning it, implied ſuch a reference to matter, as was neceſſary for furniſhing a plauſible foundation, for applying to it the received maxims of natural philoſophy.

ANOTHER obſervation, too, which was formerly hinted at, is confirmed by the ſame hiſtorical review; that, in the order of inquiry, the phenomena of viſion had firſt engaged the attention of philoſophers; and had ſuggeſted to them the greater part of their language, with reſpect to perception in general; and that, in conſequence of this circumſtance, the common modes of expreſſion on the ſubject, unphilosophical and fanciful at beſt, even when applied to the ſenſe of ſeeing, are, in the caſe of all the other ſenſes, obviouſly unintelligible and ſelf-contradictory.—"As to objects of ſight," ſays Dr. Reid, "I underſtand

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" derſtand what is meant by an image of their figure in the " brain: but how ſhall we conceive an image of their colour, " where there is abſolute darkneſs? And, as to all other objects " of ſenſe, except figure and colour, I am unable to conceive " what is meant by an image of them. Let any man ſay, what " he means by an image of heat and cold, an image of " hardneſs or ſoftneſs, an image of ſound, or ſmell, or taſte. " The word *image*, when applied to theſe objects of ſenſe, has " abſolutely no meaning."—This palpable imperfection in the ideal theory has plainly taken riſe from the natural order in which the phenomena of perception preſent themſelves to the curioſity.

THE miſtakes, which have been ſo long current in the world, about this part of the human conſtitution, will, I flatter myſelf, juſtify me for proſecuting the ſubject a little farther; in particular, for illuſtrating, at ſome length, the firſt of the two general remarks already referred to. This ſpeculation I enter upon the more willingly, that it affords me an opportunity of ſtating ſome important principles with reſpect to the object, and the limits, of philoſophical inquiry; to which I ſhall frequently have occaſion to refer, in the courſe of the following diſquiſitions.

SECTION II.

Of certain natural Prejudices, which ſeem to have given riſe to the common Theories of Perception.

IT ſeems now to be pretty generally agreed among philoſophers, that there is no inſtance, in which we are able to perceive a neceſſary connexion between two ſucceſſive events; or to comprehend in what manner the one proceeds from the other, as its cauſe. From experience, indeed, we learn, that there are many events, which are conſtantly conjoined, ſo that the one invariably follows the other: but it is poſſible, for any thing we know to the contrary, that this connexion, though a conſtant one, as far as our obſervation has reached, may not be a neceſſary connexion; nay, it is poſſible, that there may be no neceſſary connexions among any of the phenomena we ſee: and if there are any ſuch connexions exiſting, we may reſt aſſured that we ſhall never be able to diſcover them

I SHALL endeavour to ſhew, in another part of this work, that the doctrine I have now ſtated, does not lead to thoſe ſceptical concluſions, concerning the exiſtence of a Firſt Cauſe, which an author of great ingenuity has attempted to deduce from it.— At preſent, it is ſufficient for my purpoſe to remark, that the

See Note [C].

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word *cauſe* is uſed, both by philoſophers and the vulgar, in two ſenſes which are widely different. When it is ſaid, that every change in nature indicates the operation of a cauſe, the word *cauſe* expreſſes ſomething which is ſuppoſed to be neceſſarily connected with the change; and without which it could not have happened. This may be called the *metaphyſical* meaning of the word; and ſuch cauſes may be called *metaphyſical* or *efficient cauſes*.—In natural philoſophy, however, when we ſpeak of one thing being the cauſe of another, all that we mean is, that the two are conſtantly conjoined; ſo that, when we ſee the one, we may expect the other. Theſe conjunctions we learn from experience alone; and without an acquaintance with them, we could not accommodate our conduct to the eſtabliſhed courſe of nature.—The cauſes which are the objects of our inveſtigation in natural philoſophy, may, for the ſake of diſtinction, be called *phyſical cauſes*.

I AM very ready to acknowledge, that this doctrine, concerning the object of natural philoſophy, is not altogether agreeable to popular prejudices. When a man, unaccuſtomed to metaphyſical ſpeculations, is told, for the firſt time, that the ſcience of phyſics gives us no information concerning the efficient cauſes of the phenomena about which it is employed, he feels ſome degree of ſurpriſe and mortification. The natural bias of the mind, is ſurely to conceive phyſical events as ſomehow linked together; and material ſubſtances, as poſſeſſed of certain powers and virtues, which fit them to produce particular effects. That we have no reaſon to believe this to be the

the caſe, has been ſhewn in a very ſatisfactory manner by Mr. Hume, and by other writers; and muſt, indeed, appear evident to every perſon, on a moment's reflection. It is a curious queſtion, what gives riſe to the prejudice?

In ſtating the argument for the exiſtence of the Deity, ſeveral modern philoſophers have been at pains to illuſtrate that law of our nature which leads us to refer every change we perceive in the univerſe, to the operation of an efficient cauſe *.—This reference is not the reſult of reaſoning, but neceſſarily accompanies the perception; ſo as to render it impoſſible for us to ſee the change, without feeling a conviction of the operation of ſome cauſe, by which it was produced; much in the ſame manner in which we find it to be impoſſible to conceive a ſenſation, without being impreſſed with a belief of the exiſtence of a ſentient being. Hence, I apprehend, it is, that when we ſee two events conſtantly conjoined, we are led to aſſociate the idea of cauſation, or efficiency, with the former, and to refer to it that power or energy by which the change was produced; in conſequence of which aſſociation, we come to conſider philoſophy as the knowledge of efficient cauſes; and loſe ſight of the operation of mind, in producing the phenomena of nature.—It is by an aſſociation ſomewhat ſimilar, that we connect our ſenſations of colour, with the primary qualities of body. A moment's reflexion muſt ſatisfy any one, that the ſenſation of colour can only reſide in a mind; and yet our natural bias is ſurely to connect colour with extenſion and figure, and to conceive *white*, *blue*, and *yellow*, as ſomething ſpread

* See, in particular, Dr. Reid's Eſſays on the Intellectual Powers of Man.

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over the ſurfaces of bodies. In the ſame way, we are led to aſſociate with inanimate matter, the ideas of *power*, *force*, *energy*, and *cauſation*; which are all attributes of mind, and can exiſt in a mind only.

THIS bias of our nature is ſtrengthened by another aſſociation. Our language, with reſpect to cauſe and effect, is borrowed by analogy from material objects. Some of theſe we ſee ſcattered about us, without any connexion between them; ſo that one of them may be removed from its place, without diſturbing the reſt. We can, however, by means of ſome material *vinculum*, connect two or more objects together; ſo that whenever the one is moved, the others ſhall follow. In like manner, we ſee ſome events, which occaſionally follow one another, and which are occaſionally disjoined: we ſee others, where the ſucceſſion is conſtant and invariable. The former we conceive to be analogous to objects which are looſe, and unconnected with each other; and whoſe contiguity in place, is owing merely to accidental poſition. The others to objects, which are tied together by a material vinculum. Hence we transfer to ſuch events, the ſame language which we apply to connected objects. We ſpeak of a connexion between two events, and of a chain of cauſes and effects *.

THAT this language is merely analogical, and that we know nothing of phyſical events, but the laws which regulate their ſucceſſion, muſt, I think, appear very obvious to every perſon

* See Note [D].

who

who takes the trouble to reflect on the ſubject; and yet it is certain, that it has miſled the greater part of philoſophers; and has had a ſurpriſing influence on the ſyſtems, which they have formed in very different departments of ſcience.

A FEW remarks, on ſome of the miſtaken concluſions to which the vulgar notions concerning the connexions among phyſical events, have given riſe in natural philoſophy, will illuſtrate clearly the origin of the common theories of perception; and will, at the ſame time, ſatisfy the reader, with reſpect to the train of thought which ſuggeſted the foregoing obſervations.

THE maxim, that nothing can act but where it is, and when it is, has always been admitted, with reſpect to metaphyſical or efficient cauſes. "Whatever objects" (ſays Mr. Hume) "are "conſidered as cauſes or effects, are contiguous; and nothing "can operate in a time or place, which is ever ſo little removed "from thoſe of its exiſtence." "We may therefore" (he adds) "conſider the relation of contiguity, as eſſential to that of "cauſation."—But although this maxim ſhould be admitted, with reſpect to cauſes which are efficient, and which, as ſuch, are neceſſarily connected with their effects; there is ſurely no good reaſon for extending it to phyſical cauſes, of which we know nothing, but that they are the conſtant forerunners and ſigns of certain natural events. It may, indeed, be improper, according to this doctrine, to retain the expreſſions, *cauſe* and *effect*, in natural philoſophy; but, as long as the preſent language upon the ſubject continues in uſe, the propriety of its

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application, in any particular inſtance, does not depend on the contiguity of the two events in place or time, but ſolely on this queſtion, whether the one event be the conſtant and invariable forerunner of the other, ſo that it may be conſidered as its infallible ſign?—Notwithſtanding, however, the evidence of this concluſion, philoſophers have in general proceeded upon a contrary ſuppoſition; and have diſcovered an unwillingneſs, even in phyſics, to call one event the cauſe of another, if the ſmalleſt interval of ſpace or time exiſted between them. In the caſe of motion, communicated by impulſe, they have no ſcruple to call the impulſe the cauſe of the motion; but they will not admit that one body can be the cauſe of motion in another, placed at a diſtance from it, unleſs a connexion is carried on between them, by means of ſome intervening medium.

I FLATTER myſelf, it is unneceſſary for me, after what has already been ſaid, to employ any arguments to prove, that the communication of motion by impulſe, is as unaccountable as any other phenomenon in nature. Thoſe philoſophers who have attended at all to the ſubject; even they who have been the leaſt ſceptical with reſpect to cauſe and effect, and who have admitted a neceſſary connexion among phyſical events, have been forced to acknowledge, that they could not diſcover any neceſſary connexion between impulſe and motion. Hence, ſome of them have been led to conclude, that the impulſe only rouſes the activity of the body, and that the ſubſequent motion is the effect of this activity, conſtantly exerted. "Motion," ſays one writer, "is action; and a continued motion

" tion implies a continued action." " The impulſe is only the " cauſe of the beginning of the motion: its continuance muſt be " the effect of ſome other cauſe, which continues to act as long " as the body continues to move." The attempt which another writer of great learning has made, to revive the ancient theory of mind, has ariſen from a ſimilar view of the ſubject before us. He could diſcover no neceſſary connexion between impulſe and motion; and concluded, that the impulſe was only the *occaſion* of the motion, the beginning and continuance of which, he aſcribed to the continued agency of the mind with which the body is animated.

ALTHOUGH, however, it be obvious, on a moment's conſideration, that we are as ignorant of the connexion between impulſe and motion, as of the connexion between fire and any of the effects we ſee it produce, philoſophers, in every age, ſeem to have conſidered the production of motion by impulſe, as almoſt the only phyſical fact which ſtood in need of no explanation. When we ſee one body attract another at a diſtance, our curioſity is rouſed, and we inquire how the connection is carried on between them. But when we ſee a body begin to move in conſequence of an impulſe which another has given it, we inquire no farther: on the contrary, we think a fact ſufficiently accounted for, if it can be ſhewn to be a caſe of impulſe. This diſtinction, between motion produced by impulſe, and the other phenomena of nature, we are led, in a great meaſure, to make, by confounding together efficient and phyſical cauſes; and by applying to the latter, maxims which have properly a reference only to the former.—Another circum-

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circumſtance, likewiſe, has probably conſiderable influence: that, as it is by means of impulſe alone, that we ourſelves have a power of moving external objects; this fact is more familiar to us from our infancy than any other; and ſtrikes us as a fact which is neceſſary, and which could not have happened otherwiſe. Some writers have even gone ſo far as to pretend that, although the experiment had never been made, the communication of motion by impulſe, might have been predicted by reaſoning *a priori* *.

FROM the following paſſage, in one of Sir Iſaac Newton's letters to Dr. Bentley, it appears, that he ſuppoſed the communication of motion by impulſe, to be a phenomenon much more explicable, than that a connexion ſhould ſubſiſt between two bodies placed at a diſtance from each other, without any intervening medium. "It is inconceivable," ſays he, "that "inanimate brute matter ſhould, without the mediation of "ſomething elſe which is not material, operate upon, and affect "other matter, without mutual contact; as it muſt do, if gra- "vitation, in the ſenſe of Epicurus, be eſſential and inherent in it. "And this is one reaſon why I deſired that you would not "aſcribe innate gravity to me. That gravity ſhould be innate, "inherent, and eſſential to matter, ſo that one body may act "on another, through a vacuum, without the mediation of any "thing elſe, by and through which their action and force may "be conveyed from one to another, is to me ſo great an abſurdi- "ty, that I believe no man who has, in philoſophical matters, a "competent faculty of thinking, can ever fall into it."

* See an Anſwer to Lord Kaims's Eſſay on Motion; by John Stewart, M. D.

WITH this paſſage I ſo far agree, as to allow that it is impoſſible to conceive, in what manner one body acts on another at a diſtance, through a vacuum. But I cannot admit that it removes the difficulty to ſuppoſe, that the two bodies are in actual contact. That one body may be the efficient cauſe of the motion of another body placed at a diſtance from it, I do by no means aſſert; but only, that we have as good reaſon to believe that this may be poſſible, as to believe that any one natural event is the efficient cauſe of another.

I HAVE been led into this very long diſquiſition, concerning efficient and phyſical cauſes, in order to point out the origin of the common theories of perception; all of which appear to me, to have taken riſe from the ſame prejudice, which I have already remarked to have had ſo extenſive an influence upon the ſpeculations of natural philoſophers.

THAT, in the caſe of the perception of diſtant objects, we are naturally inclined to ſuſpect, either ſomething to be emitted from the object to the organ of ſenſe, or ſome medium to intervene between the object and organ, by means of which the former may communicate an impulſe to the latter; appears from the common modes of expreſſion on the ſubject, which are to be found in all languages. In our own, for example, we frequently hear the vulgar ſpeak, of light ſtriking the eye; not in conſequence of any philoſophical theory they have been taught, but of their own crude and undirected ſpeculations. Perhaps there are few men among thoſe who have attended at all to the hiſtory of their own thoughts, who will not recollect the influence of theſe

ideas,

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ideas, at a period of life long prior to the date of their philoſophical ſtudies. Nothing, indeed, can be conceived more ſimple and natural than their origin. When an object is placed in a certain ſituation with reſpect to a particular organ of the body, a perception ariſes in the mind: when the object is removed, the perception ceaſes. * Hence we are led to apprehend ſome connexion between the object and the perception; and as we are accuſtomed to believe, that matter produces its effects by impulſe, we conclude that there muſt be ſome material medium intervening between the object and organ, by means of which the impulſe is communicated from the one to the other.—That this is really the caſe, I do not mean to diſpute. I think, however, it is evident, that the exiſtence of ſuch a medium does not in any caſe appear *a priori*; and yet the natural prejudices of men have given riſe to an univerſal belief of it, long before they were able to produce any good arguments in ſupport of their opinion.

Nor is it only to account for the connexion between the object and the organ of ſenſe, that philoſophers have had recourſe to the theory of impulſe. They have imagined that the impreſſion on the organ of ſenſe is communicated to

* Tum porrò varios rerum ſentimus odores,
Nec tamen ad nareis venienteis cernimus unquam:
Nec calidos æſtus tuimur, nec frigora quimus
Uſurpare oculis, nec voces cernere ſuemus;
Quæ tamen omnia corporeâ conſtare neceſſe 'ſt
Naturâ; quoniam ſenſus impellere poſſunt.

Lucret. lib. i. p. 299.

the

the mind, in a ſimilar manner. As one body produces a change in the ſtate of another by impulſe, ſo it has been ſuppoſed, that the external object produces perception, (which is a change in the ſtate of the mind,) firſt, by ſome material impreſſion made on the organ of ſenſe; and, ſecondly, by ſome material impreſſion communicated from the organ to the mind along the nerves and brain. Theſe ſuppoſitions, indeed, as I had occaſion already to hint, were, in the ancient theories of perception, rather implied than expreſſed; but by modern philoſophers, they have been ſtated in the form of explicit propoſitions. "As to the manner," ſays Mr. Locke, "in which "bodies produce ideas in us; it is manifeſtly by impulſe, the "only way which we can conceive bodies operate in *." And Sir Iſaac Newton, although he does not ſpeak of an *impulſe* made on the mind, plainly proceeded on the principle that, as matter can only move matter by impulſe, ſo no connexion could be carried on between matter and mind, unleſs the mind were *preſent* (as he expreſſes it) to the matter from which the laſt impreſſion is communicated. "Is not" (ſays he) "the ſen-"ſorium of animals, the place where the ſentient ſubſtance is "preſent; and to which the ſenſible ſpecies of things are "brought, through the nerves and brain, that there they may "be perceived by the mind preſent in that place?" Dr. Clarke has expreſſed the ſame idea ſtill more confidently, in the following paſſage of one of his letters to Leibnitz. "Without "being preſent † to the images of the things perceived, the "ſoul

* Eſſay on Human Underſtanding, book ii. chap. viii. § 11.

† This phraſe of "the ſoul *being preſent* to the images of external objects," has been uſed by many philoſophers, ſince the time of Des Cartes; evi-

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" ſoul could not poſſibly perceive them. A living ſubſtance can " only there perceive, where it is preſent. Nothing can any " more act, or be acted upon, *where* it is not preſent, than it " can *when* it is not." " How body acts upon mind, or mind " upon body," (ſays Dr. Porterfield *,) " I know not; but this " I am very certain of, that nothing can act, or be acted upon, " where it is not; and therefore, our mind can never perceive " any thing but its own proper modifications, and the various " ſtates of the ſenſorium, to which it is preſent: ſo that it is not " the external ſun and moon, which are in the heavens, which " our mind perceives, but only their image or repreſentation, " impreſſed upon the ſenſorium. How the ſoul of a ſeeing man " ſees theſe images, or how it receives thoſe ideas, from ſuch " agitations in the ſenſorium, I know not; but I am ſure it can " never perceive the external bodies themſelves, to which it is " not preſent."

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dently from a deſire to avoid the abſurdity of ſuppoſing, that images of extenſion and figure can exiſt in an unextended mind.

" Quæris," (ſays Des Cartes himſelf, in replying to the objections of one of his antagoniſts) " quomodo exiſtimem in me ſubjecto inextenſo recipi poſſe ſpeciem, " ideamve corporis quod extenſum eſt. Reſpondeo nullam ſpeciem corpoream " in mente recipi, ſed puram intellectionem tam rei corporeæ quam incorporeæ " fieri abſque ulla ſpecie corporea; ad imaginationem vero, quæ non niſi de " rebus corporeis eſſe poteſt, opus quidem eſſe ſpecie quæ ſit verum corpus, et " *ad quam mens ſe applicet*, ſed non quæ in mente recipiatur."——It appears, therefore, that this philoſopher ſuppoſed his images, or ideas, to exiſt in the *brain*, and not in the *mind*. Mr. Locke's expreſſions ſometimes imply the one ſuppoſition, and ſometimes the other.

* See his Treatiſe on the Eye, vol. ii. p. 356.

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* THE ſame train of thinking, which had led theſe philoſophers to ſuppoſe, that external objects are perceived by means of ſpecies proceeding from the object to the mind, or by means of ſome material impreſſion made on the mind by the brain, has ſuggeſted to a late writer a very different theory; that the mind, when it perceives an external object, quits the body, and is preſent to the object of perception. "The "mind," (ſays the learned author of Antient Metaphyſics,) "is not where the body is, when it perceives what is "diſtant from the body, either in time or place, becauſe no-"thing can act, but when, and where, it is. Now, the mind "acts when it perceives. The mind, therefore, of every ani-"mal who has memory or imagination, acts, and by conſe-"ſequence exiſts, when and where the body is not; for it "perceives objects diſtant from the body both in time and "place †." Indeed, if we take for granted, that in perception the mind acts upon the object, or the object upon the mind, and, at the ſame time, admit the truth of the maxim, that

* "The ſlighteſt philoſophy" (ſays Mr. Hume) "teaches us, that nothing "can ever be preſent to the mind, but an image, or perception; and that the "ſenſes are only the inlets, through which theſe images are conveyed; with-"out being able to produce any immediate intercourſe between the mind and the "object. The table, which we ſee, ſeems to diminiſh, as we remove farther "from it: but the real table, which exiſts independent of us, ſuffers no al-"teration: it was, therefore, nothing but its image which was preſent to the "mind. Theſe" (he adds) "are the obvious dictates of reaſon."

ESSAY *on the* ACADEMICAL *or* SCEPTICAL PHILOSOPHY.

† Ant. Met. vol. ii. p. 306.

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" nothing can act but where it is," we muſt, of neceſſity, conclude, either that objects are perceived in a way ſimilar to what is ſuppoſed in the ideal theory, or that, in every act of perception, the ſoul quits the body, and is preſent to the object perceived. And accordingly, this alternative is expreſsly ſtated by Malebranche; who differs, however, from the writer laſt quoted, in the choice which he makes of his hypotheſis; and even reſts his proof of its truth on the improbability of the other opinion. " I ſuppoſe," ſays he, " that every one will grant, " that we perceive not external objects immediately, and of " themſelves. We ſee the ſun, the ſtars, and an infinity of " objects without us; and it is not at all likely that, upon ſuch " occaſions, the ſoul ſallies out of the body, in order to be pre- " ſent to the objects perceived. She ſees them not therefore " by themſelves; and the immediate object of the mind is " not the thing perceived, but ſomething which is intimately " united to the ſoul; and it is that which I call an idea: ſo " that by the word idea, I underſtand nothing elſe here but " that which is neareſt to the mind when we perceive any " object.——It ought to be carefully obſerved, that, in order " to the mind's perceiving any object, it is abſolutely ne- " ceſſary that the idea of that object be actually preſent " to it. Of this it is not poſſible to doubt. The things " which the ſoul perceives, are of two kinds. They are " either in the ſoul, or they are without the ſoul. Thoſe " that are in the ſoul, are its own thoughts; that is to ſay, " all its different modifications. The ſoul has no need of " ideas for perceiving theſe things. But with regard to

" things without the ſoul, we cannot perceive them but by " means of ideas."

To theſe quotations, I ſhall add another, which contains the opinion of Buffon upon the ſubject. As I do not underſtand it ſo completely, as to be able to tranſlate it in a manner intelligible to myſelf, I ſhall tranſcribe it in the words of the author.

" L'ame s'unit intimement à tel objet qu'il lui plâit, la diſ-
" tance, la grandeur, la figure, rien ne peut nuire à cette union
" lorſque l'ame la veut: elle ſe fait et ſe fait en un inſtant . . . . .
" la volonté n'eſt-elle donc qu'un mouvement corporel, et la
" contemplation un ſimple attouchement? Comment cet attouche-
" ment pourroit-il ſe faire ſur un objet éloigné, ſur un ſujet
" abſtrait? Comment pourroit-il s'opérer en un inſtant indivi-
" ſible? A-t-on jamais conçu du mouvement, ſans qu'il y êut
" de l'eſpace et du tems? La volonté, ſi c'eſt un mouvement,
" n'eſt donc pas un mouvement matériel, et ſi l'union de l'ame
" à ſon objet eſt un attouchement, un contact, cet attouchement
" ne ſe fait-il pas au loin? ce contact n'eſt il pas une péné-
" tration?"

ALL theſe theories appear to me to have taken riſe, firſt, from an inattention to the proper object of philoſophy, and an application of the ſame general maxims to phyſical and to efficient cauſes; and, ſecondly, from an apprehenſion, that we underſtand the connexion between impulſe and motion, better than

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than any other phyſical fact. From the detail which I have given, it appears how extenſive an influence this prejudice has had on the inquiries both of natural philoſophers and of metaphyſicians.

In the foregoing reaſonings, I have taken for granted, that motion may be produced by impulſe; and have contented myſelf with aſſerting, that this fact is not more explicable, than the motions which the Newtonians refer to gravitation; or than the intercourſe which is carried on between the mind and external objects in the caſe of perception. The truth, however, is, that ſome of the ableſt philoſophers in Europe are now ſatisfied, not only that there is no evidence of motion being in any caſe produced by the actual contact of two bodies; but that very ſtrong proofs may be given, of the abſolute impoſſibility of ſuch a ſuppoſition: and hence they have been led to conclude, that all the effects which are commonly referred to impulſe, ariſe from a power of repulſion, extending to a ſmall and imperceptible diſtance round every element of matter. If this doctrine ſhall be confirmed by future ſpeculations in phyſics, it muſt appear to be a curious circumſtance in the hiſtory of ſcience, that philoſophers have been ſo long occupied in attempting to trace *all the phenomena of matter, and even ſome of the phenomena* of mind, to a general fact, which, upon an accurate examination, is found to have no exiſtence.——I do not make this obſervation with a view to depreciate the labours of theſe philoſophers; for, although the ſyſtem of Boſcovich were completely

pletely eſtabliſhed, it would not diminiſh, in the ſmalleſt degree, the value of thoſe phyſical inquiries, which have proceeded on the common hypotheſis, with reſpect to impulſe. The laws which regulate the communication of motion, in the caſe of apparent contact, are the moſt general facts we obſerve among the terreſtrial phenomena; and they are, of all phyſical events, thoſe which are the moſt familiar to us, from our earlieſt infancy. It was therefore not only natural but proper, that philoſophers ſhould begin their phyſical inquiries, with attempting to refer to theſe, (which are the moſt general laws of nature, expoſed to the examination of our ſenſes,) the particular appearances they wiſhed to explain. And, if ever the theory of Boſcovich ſhould be completely eſtabliſhed, it will have no other effect, than to reſolve theſe laws into ſome principle ſtill more general, without affecting the ſolidity of the common doctrine, ſo far as it goes.

SECTION III.

Of Dr. Reid's Speculations on the Subject of Perception.

IT was chiefly in conſequence of the ſceptical concluſions which Biſhop Berkeley and Mr. Hume had deduced from the ancient theories of perception, that Dr. Reid was led to call them in queſtion; and he appears to me to have ſhewn, in the moſt ſatisfactory manner, not only that they are perfectly hypothetical, but that the ſuppoſitions they involve, are abſurd and

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and impoſſible. His reaſonings, on this part of our conſtitution, undoubtedly form the moſt important acceſſion which the philoſophy of the human mind has received ſince the time of Mr. Locke.

BUT although Dr. Reid has been at much pains to overturn the old ideal ſyſtem, he has not ventured to ſubſtitute any hypotheſis of his own in its place. And, indeed, he was too well acquainted with the limits which Nature has preſcribed to our philoſophical inquiries, to think of indulging his curioſity, in ſuch unprofitable ſpeculations. All, therefore, that he is to be underſtood as aiming at, in his inquiries concerning our perceptive powers, is to give a preciſe ſtate of the fact, diveſted of all theoretical expreſſions; in order to prevent philoſophers from impoſing on themſelves any longer, by words without meaning; and to extort from them an acknowledgment, that, with reſpect to the proceſs of nature in perception, they are no leſs ignorant than the vulgar.

ACCORDING to this view of Dr. Reid's reaſonings, on the ſubject of perception, the purpoſe to which they are ſubſervient may appear to ſome to be of no very conſiderable importance; but the truth is, that one of the moſt valuable effects of genuine philoſophy, is to remind us of the limited powers of the human underſtanding; and to revive thoſe natural feelings of wonder and admiration, at the ſpectacle of the univerſe, which are apt to languiſh, in conſequence of long familiarity. The moſt profound diſcoveries which are placed within the reach of our reſearches, inſtead of laying open to our view the efficient cauſes

cauſes of natural appearances, lead to a confeſſion of human ignorance; for, while they flatter the pride of man, and increaſe his power, by enabling him to trace the ſimple and beautiful laws by which phyſical events are regulated, they call his attention, at the ſame time, to thoſe general and ultimate facts which bound the narrow circle of his knowledge; and which, by evincing to him the operation of powers, whoſe nature muſt for ever remain unknown, ſerve to remind him of the inſufficiency of his faculties to penetrate the ſecrets of the univerſe. Wherever we direct our inquiries; whether to the anatomy and phyſiology of animals, to the growth of vegetables, to the chemical attractions and repulſions, or to the motions of the heavenly bodies; we perpetually perceive the effects of powers which cannot belong to matter. To a certain length we are able to proceed; but in every reſearch, we meet with a line, which no induſtry nor ingenuity can paſs. It is a line too, which is marked with ſufficient diſtinctneſs; and which no man now thinks of paſſing, who has juſt views of the nature and object of philoſophy. It forms the ſeparation between that field which falls under the ſurvey of the phyſical inquirer, and that unknown region, of which, though it was neceſſary that we ſhould be aſſured of the exiſtence, in order to lay a foundation for the doctrines of natural theology, it hath not pleaſed the Author of the univerſe to reveal to us the wonders, in this infant ſtate of our being. It was, in fact, chiefly by tracing out this line, that Lord Bacon did ſo much ſervice to ſcience.

BESIDE this effect, which is common to all our philoſophical purſuits, of impreſſing the mind with a ſenſe of that myſte-

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myſterious agency, or efficiency, into which general laws muſt be reſolved; they have a tendency, in many caſes, to revive thoſe emotions of wonder and of curioſity, which the appearances of nature are ſo admirably fitted to excite; but which they ceaſe to produce, in conſequence of long familiarity. In order to counteract the influence of habit in weakening theſe emotions, it is neceſſary either to lead the attention to facts which are calculated to ſtrike by their novelty, or to preſent to the mind familiar appearances in a new light: and ſuch are the neceſſary and obvious effects of philoſophical inquiries; ſometimes extending our views to parts of nature which are removed from vulgar obſervation; and ſometimes correcting our firſt apprehenſions with reſpect to ordinary events.——The communication of motion by impulſe, (as I already hinted,) is as unaccountable as any phenomenon we know; and yet, moſt men are diſpoſed to conſider it, as a fact which does not reſult from will, but from neceſſity. To ſuch men, it may be uſeful to direct their attention to the univerſal law of gravitation; which, although not more wonderful in itſelf, than the common effects of impulſe, is more fitted, by its novelty, to awaken their attention, and to excite their curioſity. If the theory of Boſcovich ſhould ever be eſtabliſhed on a ſatisfactory foundation, it would have this tendency in a ſtill more remarkable degree, by teaching us that the communication of motion by impulſe, (which we are apt to conſider as a neceſſary truth,) has no exiſtence in nature; and that every caſe in which it appears to our ſenſes to take place, is a phenomenon no leſs inexplicable, than that principle of attraction which binds together the moſt remote parts of the univerſe.

If ſuch, however, be the effects of our philoſophical purſuits when ſucceſsfully conducted, it muſt be confeſſed that the tendency of imperfect or erroneous theories is widely different. By a ſpecious ſolution of inſuperable difficulties, they ſo dazzle and bewilder the underſtanding, as, at once, to prevent us from advancing, with ſteadineſs, towards the limit of human knowledge; and from perceiving the exiſtence of a region beyond it, into which philoſophy is not permitted to enter. In ſuch caſes, it is the buſineſs of genuine ſcience to unmaſk the impoſture, and to point out clearly, both to the learned and to the vulgar, what reaſon can, and what ſhe cannot, accompliſh. This, I apprehend, has been done, with reſpect to the hiſtory of our perceptions, in the moſt ſatisfactory manner, by Dr. Reid.——When a perſon little accuſtomed to metaphyſical ſpeculations is told, that, in the caſe of volition, there are certain inviſible fluids, propagated from the mind to the organ which is moved; and that, in the caſe of perception, the exiſtence and qualities of the external object are made known to us by means of ſpecies, or phantaſms, or images, which are preſent to the mind in the ſenſorium; he is apt to conclude, that the intercourſe between mind and matter is much leſs myſterious than he had ſuppoſed; and that, although theſe expreſſions may not convey to him any very diſtinct meaning, their import is perfectly underſtood by philoſophers. It is now, I think, pretty generally acknowledged by phyſiologiſts, that the influence of the will over the body, is a myſtery which has never yet been unfolded; but, ſingular as it may appear, Dr. Reid was the firſt perſon who had courage to lay completely aſide all the common hypothetical language con-

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cerning perception, and to exhibit the difficulty in all its magnitude, by a plain ſtatement of the fact. To what then, it may be aſked, does this ſtatement amount?—Merely to this; that the mind is ſo formed, that certain impreſſions produced on our organs of ſenſe by external objects, are followed by correſpondent ſenſations; and that theſe ſenſations, (which have no more reſemblance to the qualities of matter, than the words of a language have to the things they denote,) are followed by a perception of the exiſtence and qualities of the bodies by which the impreſſions are made; that all the ſteps of this proceſs are equally incomprehenſible; and that, for any thing we can prove to the contrary, the connexion between the ſenſation and the perception, as well as that between the impreſſion and the ſenſation, may be both arbitrary: that it is therefore by no means impoſſible, that our ſenſations may be merely the occaſions on which the correſpondent perceptions are excited; and that, at any rate, the conſideration of theſe ſenſations, which are attributes of mind, can throw no light on the manner in which we acquire our knowledge of the exiſtence and qualities of body. From this view of the ſubject, it follows, that it is external objects themſelves, and not any ſpecies or images of theſe objects, that the mind perceives; and that, although, by the conſtitution of our nature, certain ſenſations are rendered the conſtant antecedents of our perceptions, yet it is juſt as difficult to explain how our perceptions are obtained by their means, as it would be, upon the ſuppoſition, that the mind were all at once inſpired with them, without any concomitant ſenſations whatever.

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THESE remarks are general, and apply to all our various perceptions; and they evidently ſtrike at the root of all the common theories upon the ſubject. The laws, however, which regulate theſe perceptions, are different in the caſe of the different ſenſes, and form a very curious object of philoſophical inquiry.—Thoſe, in particular, which regulate the acquired perceptions of ſight, lead to ſome very intereſting and important ſpeculations; and, I think, have never yet been explained in a manner completely ſatisfactory. To treat of them in detail, does not fall under the plan of this work; but I ſhall have occaſion to make a few remarks on them, in the chapter on Conception.

IN oppoſition to what I have here obſerved on the importance of Dr. Reid's ſpeculations concerning our perceptive powers, I am ſenſible it may be urged, that they amount merely to a negative diſcovery; and it is poſſible, that ſome may even be forward to remark, that it was unneceſſary to employ ſo much labour and ingenuity as he has done, to overthrow an hypotheſis of which a plain account would have been a ſufficient refutation.—To ſuch perſons, I would beg leave to ſuggeſt, that, although, in conſequence of the juſter views in pneumatology, which now begin to prevail, (chiefly, I believe, in conſequence of Dr. Reid's writings,) the ideal ſyſtem may appear to many readers unphiloſophical and puerile; yet the caſe was very different when this author entered upon his inquiries: and I may even venture to add, that few poſitive diſcoveries, in the whole hiſtory of ſcience, can be mentioned, which found a juſter

CHAP. I. juſter claim to literary reputation, than to have detected, ſo clearly and unanſwerably, the fallacy of an hypotheſis, which has deſcended to us from the earlieſt ages of philoſophy; and which, in modern times, has not only ſerved to Berkeley and Hume as the baſis of their ſceptical ſyſtems, but was adopted as an indiſputable truth by Locke, by Clarke, and by Newton.

SECTION IV.

Of the Origin of our Knowledge.

THE philoſophers who endeavoured to explain the operations of the human mind by the theory of ideas, and who took for granted, that in every exertion of thought there exiſts in the mind ſome object diſtinct from the thinking ſubſtance, were naturally led to inquire whence theſe ideas derive their origin; in particular, whether they are conveyed to the mind from without by means of the ſenſes, or form part of its original furniture?

WITH reſpect to this queſtion, the opinions of the ancients were various; but as the influence of theſe opinions on the prevailing ſyſtems of the preſent age is not very conſiderable, it is not neceſſary, for any of the purpoſes I have in view in this work, to conſider them particularly. The moderns, too, have been much divided on the ſubject; ſome holding with Des Cartes, that the

the mind is furniſhed with certain innate ideas; others, with Mr. Locke, that all our ideas may be traced from ſenſation and reflection; and many, (eſpecially among the later metaphyſicians in France,) that they may be all traced from ſenſation alone. CHAP. I.

Of theſe theories, that of Mr. Locke deſerves more particularly our attention; as it has ſerved as the baſis of moſt of the metaphyſical ſyſtems which have appeared ſince his time; and as the difference between it and the theory which derives all our ideas from ſenſation alone, is rather apparent than real.

In order to convey a juſt notion of Mr. Locke's doctrine concerning the origin of our ideas, it is neceſſary to remark, that he refers to ſenſation, all the ideas which we are ſuppoſed to receive by the external ſenſes; our ideas, for example, of colours, of ſounds, of hardneſs, of extenſion, of motion; and, in ſhort, of all the qualities and modes of matter; to reflection, the ideas of our own mental operations which we derive from conſciouſneſs; our ideas, for example, of memory, of imagination, of volition, of pleaſure, and of pain. Theſe two ſources, according to him, furniſh us with all our ſimple ideas, and the only power which the mind poſſeſſes over them, is to perform certain operations, in the way of compoſition, abſtraction, generaliſation, &c. on the materials which it thus collects in the courſe of its experience. The laudable deſire of Mr. Locke, to introduce preciſion and perſpicuity into metaphyſical ſpeculations, and his anxiety to guard the mind againſt error

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error in general, naturally prepoſſeſſed him in favour of a doctrine, which, when compared with thoſe of his predeceſſors, was intelligible and ſimple; and which, by ſuggeſting a method, apparently eaſy and palpable, of analyſing our knowledge into its elementary principles, ſeemed to furniſh an antidote againſt thoſe prejudices which had been favoured by the hypotheſis of innate ideas. It is now a conſiderable time ſince this fundamental principle of Mr. Locke's ſyſtem began to loſe its authority in England; and the ſceptical concluſions, which it had been employed to ſupport by ſome later writers, furniſhed its opponents with very plauſible arguments againſt it. The late learned Mr. Harris, in particular, frequently mentions this doctrine of Mr. Locke, and always in terms of high indignation. "Mark," (ſays he, in one paſſage,) "the order of things, according to the account of "our later metaphyſicians. Firſt, comes that huge body, the "ſenſible world. Then this, and its attributes, beget ſenſible "ideas. Then, out of ſenſible ideas, by a kind of lopping "and pruning, are made ideas intelligible, whether ſpecific or "general. Thus, ſhould they admit that mind was coëval with "body; yet, till body gave it ideas, and awakened its dormant "powers, it could at beſt have been nothing more than a ſort "of dead capacity; for innate ideas it could not poſſibly have "any." And, in another paſſage: "For my own part, when "I read the detail about ſenſation and reflexion, and am taught "the proceſs at large how my ideas are all generated, I ſeem "to view the human ſoul, in the light of a crucible, where "truths are produced by a kind of logical chemiſtry."

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If Dr. Reid's reaſonings on the ſubject of ideas be admitted, all theſe ſpeculations with reſpect to their origin fall to the ground; and the queſtion to which they relate, is reduced merely to a queſtion of fact; concerning the occaſions on which the mind is firſt led to form thoſe ſimple notions into which our thoughts may be analyſed, and which may be conſidered as the principles or elements of human knowledge. With reſpect to many of theſe notions, this inquiry involves no difficulty. No one, for example, can be at a loſs to aſcertain the occaſions on which the notions of colours and ſounds are firſt formed by the mind: for theſe notions are confined to individuals who are poſſeſſed of particular ſenſes, and cannot, by any combination of words, be conveyed to thoſe who never enjoyed the uſe of them. The hiſtory of our notions of extenſion and figure, (which may be ſuggeſted to the mind by the exerciſe either of ſight or of touch,) is not altogether ſo obvious; and accordingly, it has been the ſubject of various controverſies. To trace the origin of theſe, and of our other ſimple notions with reſpect to the qualities of matter; or, in other words, to deſcribe the occaſions on which, by the laws of our nature, they are ſuggeſted to the mind, is one of the leading objects of Dr. Reid's inquiry, in his analyſis of our external ſenſes; in which he carefully avoids every hypotheſis with reſpect to the inexplicable phenomena of perception and of thought, and confines himſelf ſcrupulouſly to a literal ſtatement of facts.—Similar inquiries to theſe, may be propoſed, concerning the occaſions on which we form the notions of *time*, of *motion*, of *number*, of *cauſation*, and an infinite variety of others. Thus, it has been obſerved by different authors, that every perception of change

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ſuggeſts to the mind the notion of a *cauſe*, without which that change could not have happened. Dr. Reid remarks, that, without the faculty of memory, our perceptive powers could never have led us to form the idea of *motion*. I ſhall afterwards ſhew, in the ſequel of this work, that without the ſame faculty of memory, we never could have formed the notion of *time*; and that without the faculty of abſtraction, we could not have formed the notion of *number*.——Such inquiries, with reſpect to the origin of our knowledge, are curious and important; and if conducted with judgment, they may lead to the moſt certain concluſions; as they aim at nothing more than to aſcertain facts, which, although not obvious to ſuperficial obſervers, may yet be diſcovered by patient inveſtigation.

FROM the remarks which have been juſt made on our notions of time, of motion, and of number, it is evident, that the inquiry concerning the origin of human knowledge cannot poſſibly be diſcuſſed at the commencement of ſuch a work as this; but that it muſt be reſumed in different parts of it, as thoſe faculties of the mind come under our view, with which the formation of our different ſimple notions is connected.

WITH reſpect to the general queſtion, Whether all our knowledge may be ultimately traced from our ſenſations? I ſhall only obſerve at preſent, that the opinion we form concerning it, is of much leſs conſequence than is commonly ſuppoſed. That the mind cannot, without the groſſeſt abſurdity, be conſidered in the light of a receptacle which is gradually furniſhed from without, by materials introduced by the channel of the ſenſes; nor

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nor in that of a *tabula raſa*, upon which copies or reſemblances of things external are imprinted; I have already ſhewn at ſufficient length. Although, therefore, we ſhould acquieſce in the concluſion, that, without our organs of ſenſe, the mind muſt have remained deſtitute of knowledge, this conceſſion could have no tendency whatever to favour the principles of materialiſm; as it implies nothing more than that the impreſſions made on our ſenſes by external objects, furniſh the occaſions on which the mind, by the laws of its conſtitution, is led to perceive the qualities of the material world, and to exert all the different modifications of thought of which it is capable.

FROM the very ſlight view of the ſubject, however, which has been already given, it is ſufficiently evident, that this doctrine, which refers the origin of all our knowledge to the occaſions furniſhed by ſenſe, muſt be received with many limitations. That theſe ideas, which Mr. Locke calls ideas of reflexion, (or, in other words, the notions which we form of the ſubjects of our own conſciouſneſs,) are not ſuggeſted to the mind immediately by the ſenſations ariſing from the uſe of our organs of perception, is granted on all hands; and, therefore, the amount of the doctrine now mentioned, is nothing more than this; that the firſt occaſions on which our various intellectual faculties are exerciſed, are furniſhed by the impreſſions made on our organs of ſenſe; and conſequently, that, without theſe impreſſions, it would have been impoſſible for us to arrive at the knowledge of our faculties. Agreeably to this explana-

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tion of the doctrine, it may undoubtedly be ſaid with plauſibility, (and, I am inclined to believe, with truth,) that the occaſions on which all our notions are formed, are furniſhed either immediately or ultimately by ſenſe; but, if I am not much miſtaken, this is not the meaning which is commonly annexed to the doctrine, either by its advocates or their opponents. One thing at leaſt is obvious, that, in this ſenſe, it does not lead to thoſe conſequences which have intereſted one party of philoſophers in its defence, and another in its refutation.

THERE is another very important conſideration which deſerves our attention in this argument: that, even on the ſuppoſition that certain impreſſions on our organs of ſenſe are neceſſary to awaken the mind to a conſciouſneſs of its own exiſtence, and to give riſe to the exerciſe of its various faculties; yet all this might have happened, without our having any knowledge of the qualities, or even of the exiſtence, of the material world. To facilitate the admiſſion of this propoſition, let us ſuppoſe a being formed in every other reſpect like man; but poſſeſſed of no ſenſes, excepting thoſe of hearing and ſmelling. I make choice of theſe two ſenſes, becauſe it is obvious, that by means of them alone we never could have arrived at the knowledge of the primary qualities of matter, or even of the exiſtence of things external. All that we could poſſibly have inferred from our occaſional ſenſations of ſmell and ſound, would have been, that there exiſted ſome unknown cauſe by which they were produced.

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LET us ſuppoſe then a particular ſenſation to be excited in the mind of ſuch a being. The moment this happens, he muſt neceſſarily acquire the knowledge of two facts at once: that of the exiſtence of *the ſenſation;* and that of *his own exiſtence*, as a ſentient being. After the ſenſation is at an end, he can *remember* he felt it; he can *conceive* that he feels it again. If he has felt a variety of different ſenſations, he can compare them together in reſpect of the pleaſure or the pain they have afforded him; and will naturally *deſire* the return of the agreeable ſenſations, and be *afraid* of the return of thoſe which were painful. If the ſenſations of ſmell and ſound are both excited in his mind at the ſame time, he can *attend* to either of them he chuſes, and withdraw his attention from the other: or he can withdraw his *attention* from both, and fix it on ſome ſenſation he has felt formerly. In this manner, he might be led, merely by ſenſations exiſting in his mind, and conveying to him no information concerning matter, to exerciſe many of his moſt important faculties; and amidſt all theſe different modifications and operations of his mind, he would feel, with irreſiſtible conviction, that they all belong to one and the ſame ſentient and intelligent being; or, in other words, that they are all modifications and operations of himſelf.—I ſay nothing, at preſent, of the various ſimple notions, (or ſimple ideas, as they are commonly called,) which would ariſe in his mind; for example, the ideas of *number*, of *duration*, of *cauſe* and *effect*, of *perſonal identity*; all of which, though perfectly unlike his ſenſations, could not fail to be ſuggeſted by means of them. Such a being, then, might know all that we know of mind at preſent; and as his language would be

CHAP. I. be appropriated to mind ſolely, and not borrowed by analogy from material phenomena, he would even poſſeſs important advantages over us in conducting the ſtudy of pneumatology.

FROM theſe obſervations it ſufficiently appears, what is the real amount of the celebrated doctrine, which refers the origin of all our knowledge to our ſenſations; and that, even granting it to be true, (which, for my own part, I am diſpoſed to do, in the ſenſe in which I have now explained it,) it would by no means follow from it, that our notions of the operations of mind, nor even many of thoſe notions which are commonly ſuggeſted to us, *in the firſt inſtance*, by the perception of external objects, are *neceſſarily ſubſequent* to our knowledge of the qualities, or even of the exiſtence, of matter.

THE remarks which I have offered on this doctrine, will not appear ſuperfluous to thoſe who recollect that, although it has, for many years paſt, been a ſubject of controverſy in England, it continues ſtill to be implicitly adopted by the beſt philoſophical writers in France; and that it has been employed by ſome of them to ſupport the ſyſtem of materialiſm; and by others to ſhew, that the intellectual diſtinctions between man and brutes, ariſe entirely from the differences in their animal organization, and in their powers of external perception.

CHAPTER SECOND.

Of Attention.

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WHEN we are deeply engaged in converſation, or occupied with any ſpeculation that is intereſting to the mind, the ſurrounding objects either do not produce in us the perceptions they are fitted to excite; or theſe perceptions are inſtantly forgotten. A clock, for example, may ſtrike in the ſame room with us, without our being able, next moment, to recollect whether we heard it or not.

IN theſe, and ſimilar caſes, I believe, it is commonly taken for granted, that we really do not perceive the external object. From ſome analogous facts, however, I am inclined to ſuſpect that this opinion is not well-founded. A perſon who falls aſleep at church, and is ſuddenly awaked, is unable to recollect the laſt words ſpoken by the preacher; or even to recollect that he was ſpeaking at all. And yet, that ſleep does not ſuſpend entirely the powers of perception, may be inferred from this, that if the preacher were

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were to make a ſudden pauſe in his diſcourſe, every perſon in the congregation who was aſleep, would inſtantly awake. In this caſe, therefore, it appears, that a perſon may be conſcious of a perception, without being able afterwards to recollect it.

MANY other inſtances of the ſame general fact might be produced. When we read a book, (eſpecially in a language which is not perfectly familiar to us,) we muſt perceive ſucceſſively every different letter, and muſt afterwards combine theſe letters into ſyllables and words, before we comprehend the meaning of a ſentence. This proceſs, however, paſſes through the mind, without leaving any trace in the memory.

IT has been proved by optical writers, that, in perceiving the diſtances of viſible objects from the eye, there is a judgment of the underſtanding antecedent to the perception. In ſome caſes, this judgment is founded on a variety of circumſtances combined together; the conformation of the organ neceſſary for diſtinct viſion; the inclination of the optic axes; the diſtinctneſs or indiſtinctneſs of the minute parts of the object; the diſtances of the intervening objects from each other, and from the eye; and, perhaps, on other circumſtances beſides theſe: and yet, in conſequence of our familiarity with ſuch proceſſes from our earlieſt infancy, the perception ſeems to be inſtantaneous; and it requires much reaſoning, to con-

vince perſons unaccuſtomed to philoſophical ſpeculations, that the fact is otherwiſe. CHAP. II.

ANOTHER inſtance of a ſtill more familiar nature, may be of uſe for the farther illuſtration of the ſame ſubject. It is well known, that our thoughts do not ſucceed each other at random, but according to certain laws of aſſociation, which modern philoſophers have been at much pains to inveſtigate. It frequently, however, happens, particularly when the mind is animated by converſation, that it makes a ſudden tranſition from one ſubject to another, which, at firſt view, appears to be very remote from it; and that it requires a conſiderable degree of reflexion, to enable the perſon himſelf by whom the tranſition was made, to aſcertain what were the intermediate ideas. A curious inſtance of ſuch a ſudden tranſition is mentioned by Hobbes in his Leviathan. "In a company," (ſays he,) "in "which the converſation turned on the civil war, what could "be conceived more impertinent, than for a perſon to aſk "abruptly, What was the value of a Roman denarius? On a "little reflexion, however, I was eaſily able to trace the train "of thought which ſuggeſted the queſtion; for the original "ſubject of diſcourſe naturally introduced the hiſtory of the "King, and of the treachery of thoſe who ſurrendered his per-"ſon to his enemies; this again introduced the treachery of "Judas Iſcariot, and the ſum of money which he received for "his reward.—And all this train of ideas," ſays Hobbes, "paſſed through the mind of the ſpeaker in a twinkling, in "conſequence of the velocity of thought." It is by no means improbable, that if the ſpeaker himſelf had been interrogated about the connexion of ideas, which led him aſide from the

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original topic of diſcourſe, he would have found himſelf, at firſt, at a loſs for an anſwer.

In the inſtances which have been laſt mentioned, we have alſo a proof, that a perception, or an idea, which paſſes through the mind, without leaving any trace in the memory, may yet ſerve to introduce other ideas connected with it by the laws of aſſociation. Other proofs of this important fact ſhall be mentioned afterwards.

When a perception or an idea paſſes through the mind, without our being able to recollect it next moment, the vulgar themſelves aſcribe our want of memory to a want of attention. Thus, in the inſtance already mentioned, of the clock, a perſon, upon obſerving that the minute hand had juſt paſſed twelve, would naturally ſay, that he did not attend to the clock when it was ſtriking. There ſeems, therefore, to be a certain effort of mind upon which, even in the judgement of the vulgar, memory in ſome meaſure depends; and which they diſtinguiſh by the name of attention.

The connexion between attention and memory has been remarked by many authors. "Nec dubium eſt," (ſays Quinctilian, ſpeaking of memory,) "quin plurimum in hac parte, "valeat mentis intentio, et velut acies luminum a proſpectu "rerum quas intuetur non averſa." The ſame obſervation has been made by Locke *, and by moſt of the writers on the ſubject of education.

* "Memory depends much on attention and repetition." Locke's Eſſay, b. i. chap. x.

But

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BUT although the connexion between attention and memory has been frequently remarked in general terms, I do not recollect that the power of attention has been mentioned by any of the writers on pneumatology, in their enumeration of the faculties of the mind *; nor has it been conſidered by any one, ſo far as I know, as of ſufficient importance to deſerve a particular examination. Helvetius, indeed, in his very ingenious work, *De l'Eſprit*, has intitled one of his chapters, *De l'inegale capacité d'Attention;* but what he conſiders under this article, is chiefly that capacity of patient inquiry, (or as he calls it, *une attention ſuivie,*) upon which philoſophical genius ſeems in a great meaſure to depend. He has alſo remarked †, with the writers already mentioned, that the impreſſion which any thing makes on the memory, depends much on the degree of

* Some important obſervations on the ſubject of attention occur in different parts of Dr. Reid's writings; particularly in his Eſſays on the Intellectual Powers of Man, p. 62.; and in his Eſſays on the Active Powers of Man, p. 78, et ſeq.—To this ingenious author we are indebted for the remark, that attention to things external, is properly called *obſervation*; and attention to the ſubjects of our conſciouſneſs, *reflexion*. He has alſo explained the cauſes of the peculiar difficulties which accompany this laſt exertion of the mind, and which form the chief obſtacles to the progreſs of pneumatology. I ſhall have occaſion, in another part of this work, to treat of habits of inattention in general, and to ſuggeſt ſome practical hints with reſpect to the culture both of the powers of obſervation and reflexion. The view which I propoſe to take of attention at preſent, is extremely limited; and is intended merely to comprehend ſuch general principles as are neceſſary to prepare the reader for the chapters which are to follow.

† "C'eſt l'attention, plus ou moins grande, qui grave plus ou moins profondément les objets dans la memoire."

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attention we give to it; but he has taken no notice of that effort which is abſolutely eſſential to the loweſt degree of memory. It is this effort that I propoſe to conſider at preſent;—not thoſe different degrees of attention which imprint things more or leſs deeply on the mind, but that act or effort without which we have no recollection or memory whatever.

WITH reſpect to the nature of this effort, it is perhaps impoſſible for us to obtain much ſatisfaction. We often ſpeak of greater and leſs degrees of attention; and, I believe, in theſe caſes, conceive the mind (if I may uſe the expreſſion) to exert itſelf with different degrees of energy. I am doubtful, however, if this expreſſion conveys any diſtinct meaning. For my own part, I am inclined to ſuppoſe, (though I would by no means be underſtood to ſpeak with confidence,) that it is eſſential to memory, that the perception or the idea that we would wiſh to remember, ſhould remain in the mind for a certain ſpace of time, and ſhould be contemplated by it excluſively of every thing elſe; and that attention conſiſts partly (perhaps entirely) in the effort of the mind, to detain the idea or the perception, and to exclude the other objects that ſolicit its notice.

NOTWITHSTANDING, however, the difficulty of aſcertaining, in what this act of the mind conſiſts, every perſon muſt be ſatisfied of its reality from his own conſciouſneſs; and of its eſſential connexion with the power of memory. I have already mentioned ſeveral inſtances of ideas paſſing through the mind, without our being able

able to recollect them next moment. Theſe inſtances were produced, merely to illuſtrate the meaning I annex to the word attention; and to recall to the recollection of the reader, a few ſtriking caſes, in which the poſſibility of our carrying on a proceſs of thought, which we are unable to attend to at the time, or to remember afterwards, is acknowledged in the received ſyſtems of philoſophy. I ſhall now mention ſome other phenomena, which appear to me to be very similar to theſe, and to be explicable in the ſame manner; although they have commonly been referred to very different principles. CHAP. II.

THE wonderful effect of practice in the formation of habits, has been often, and juſtly, taken notice of, as one of the moſt curious circumſtances in the human conſtitution. A mechanical operation, for example, which we at firſt performed with the utmoſt difficulty, comes, in time, to be ſo familiar to us, that we are able to perform it without the ſmalleſt danger of miſtake; even while the attention appears to be completely engaged with other ſubjects. The truth ſeems to be, that, in conſequence of the aſſociation of ideas, the different ſteps of the proceſs preſent themſelves ſucceſſively to the thoughts, without any recollection on our part, and with a degree of rapidity proportioned to the length of our experience; ſo as to ſave us entirely the trouble of heſitation and reflexion, by giving us every moment a preciſe and ſteady notion of the effect to be produced *.

IN

* I do not mean by this obſervation, to call in queſtion the effects which the practice of the mechanical arts has on the muſcles of the body. Theſe are an indiſputable

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In the caſe of ſome operations which are very familiar to us, we find ourſelves unable to attend to, or to recollect, the acts of the will by which they were preceded; and accordingly, ſome philoſophers of great eminence have called in queſtion the exiſtence of ſuch volitions; and have repreſented our habitual actions as involuntary and mechanical. But ſurely the circumſtance of our inability to recollect our volitions, does not authoriſe us to diſpute their poſſibility; any more than our inability to attend to the proceſs of the mind, in eſtimating the diſtance of an object from the eye, authoriſes us to affirm that the perception is inſtantaneous. Nor does it add any force to the objection to urge, that there are inſtances in which we find it difficult, or perhaps impoſſible, to check our habitual actions by a contrary volition. For it muſt be remembered, that this contrary volition does not remain with us ſteadily during the whole operation; but is merely a general intention or reſolution, which is baniſhed from the mind, as ſoon as the occaſion preſents itſelf, with which the habitual train of our thoughts and volitions is aſſociated *.

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indiſputable as its effects on the mind.—A man who has been accuſtomed to write with his right hand, can write better with his left hand, than another who never practiſed the art at all; but he cannot write ſo well with his left hand as with his right.—The effects of practice, therefore, it ſhould ſeem, are produced partly on the mind, and partly on the body.

* The ſolution of this difficulty, which is given by Dr. Porterfield, is ſomewhat curious.

"Such is the power of cuſtom and habit, that many actions which are no "doubt voluntary, and proceed from our mind, are in certain circumſtances "rendered neceſſary, ſo as to appear altogether mechanical, and independent "of

It may indeed be ſaid, that theſe obſervations only prove the poſſibility that our habitual actions may be voluntary. But if this be admitted, nothing more can well be required; for ſurely, if theſe phenomena are clearly explicable from the known and acknowledged laws of the human mind, it would be unphiloſophical to deviſe a new principle, on purpoſe to account for them. The doctrine, therefore, which I have laid down with reſpect to the nature of habits, is by no means founded on hypotheſis, as has been objected to me by ſome of my friends; but, on the contrary, the charge of hypotheſis falls on thoſe who attempt to explain them, by ſaying that they are *mechanical* or *automatic*; a doctrine which, if it is at all intelligible, muſt be underſtood as implying the exiſtence of ſome law of our conſtitution, which has been hitherto unobſerved by philoſophers; and to which, I believe, it will be difficult to find any thing analogous in our conſtitution.

In the foregoing obſervations, I have had in view a favourite doctrine of Dr. Hartley's; which has been maintained alſo of late by a much higher authority, I mean Dr. Reid.

" of our wills; but it does not from thence follow, that our mind is not con-
" cerned in ſuch motions, but only that it has impoſed upon itſelf a law,
" whereby it regulates and governs them to the greateſt advantage. In all this,
" there is nothing of intrinſical neceſſity; the mind is at abſolute liberty to act
" as it pleaſes; but being a wiſe agent, it cannot chuſe but to act in conformity
" to this law, by reaſon of the utility and advantage that ariſes from this way
" of acting." TREATISE ON THE EYE, vol. ii. p. 17.

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"HABIT *" (ſays this ingenious author) "differs from inſtinct, not in its nature, but in its origin; the laſt being "natural, the firſt acquired. Both operate without will or "intention, without thought, and therefore may be called "mechanical principles." In another paſſage †, he expreſſes himſelf thus: "I conceive it to be a part of our conſtitution, "that what we have been accuſtomed to do, we acquire not only "a facility but a proneneſs to do on like occaſions; ſo that it "requires a particular will or effort to forbear it, but to do it "requires, very often, no will at all."

THE ſame doctrine is laid down ſtill more explicitly by Dr. Hartley.

"SUPPOSE," (ſays he,) "a perſon who has a perfectly voluntary command over his fingers, to begin to learn to play on "the harpſichord. The firſt ſtep is to move his fingers from "key to key, with a ſlow motion, looking at the notes, and "exerting an expreſs act of volition in every motion. By "degrees the motions cling to one another, and to the impreſſions of the notes, in the way of aſſociation, ſo often mentioned, the acts of volition growing leſs and leſs expreſs all "the time, till at laſt they become evaneſcent and imperceptible. For an expert performer will play from notes, or "ideas laid up in the memory, and at the ſame time carry on "a quite different train of thoughts in his mind, or even hold "a converſation with another. Whence we may conclude, "that there is no intervention of the idea, or ſtate of mind,

* Eſſays on the Active Powers of Man, p. 128. † Ibid. p. 130.

"called

" called Will *." Caſes of this ſort, Hartley calls " tranſitions " of voluntary actions into automatic ones."

I CANNOT help thinking it more philoſophical to ſuppoſe, that thoſe actions which are originally voluntary, always continue ſo; although, in the caſe of operations which are become habitual in conſequence of long practice, we may not be able to recollect every different volition. Thus, in the caſe of a performer on the harpſichord, I apprehend, that there is an act of the will preceding every motion of every finger, although he may not be able to recollect theſe volitions afterwards; and although he may, during the time of his performance, be employed in carrying on a ſeparate train of thought. For, it muſt be remarked, that the moſt rapid performer can, when he pleaſes, play ſo ſlowly, as to be able to attend to, and to recollect, every ſeparate act of his will in the various movements of his fingers; and he can gradually accelerate the rate of his execution, till he is unable to recollect theſe acts. Now, in this inſtance, one of two ſuppoſitions muſt be made; the one is, that the operations in the two caſes are carried on preciſely in the ſame manner, and differ only in the degree of rapidity; and that when this rapidity exceeds a certain rate, the acts of the will are too momentary to leave any impreſſion on the memory.—The other is, that when the rapidity exceeds a certain rate, the operation is taken entirely out of our hands; and is carried on by ſome unknown power, of the nature of which we are as ignorant, as of the cauſe of the circulation of the blood, or of the motion of the

* Vol. i. p. 108, 109.

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inteſtines*. The laſt ſuppoſition ſeems to me to be ſomewhat ſimilar to that of a man who ſhould maintain, that, although a body, projected with a moderate velocity, is ſeen to paſs through all the intermediate ſpaces in moving from one place to another, yet we are not intitled to conclude, that this happens when the body moves ſo quickly as to become inviſible to the eye. The former ſuppoſition is ſupported by the analogy of many other facts in our conſtitution. Of ſome of theſe I have already taken notice; and it would be eaſy to add to the number.——An expert accountant, for example, can ſum up, almoſt with a ſingle glance of his eye, a long column of figures. He can tell the ſum, with unerring certainty; while, at the ſame time, he is unable to recollect any one of the figures of which that ſum is compoſed; and yet nobody doubts, that each of theſe figures has paſſed through his mind, or ſuppoſes, that when the rapidity of the proceſs becomes ſo great that he is

* This ſeems to have been the opinion of Biſhop Berkeley, whoſe doctrine concerning the nature of our habitual actions, coincides with that of the two philoſophers already quoted. "It muſt be owned, we are not conſcious of the "ſyſtole and diaſtole of the heart, or the motion of the diaphragm. It may "not, nevertheleſs, be thence inferred, that unknowing nature can act regu-"larly as well as ourſelves. The true inference is, that the ſelf-thinking indi-"vidual, or human perſon, is not the real author of thoſe natural motions. "And, in fact, no man blames himſelf, if they are wrong, or values himſelf, "if they are right. The ſame may be ſaid of the fingers of a muſician, which "ſome object to be moved by habit, which underſtands not; it being evident "that what is done by rule, muſt proceed from ſomething that underſtands the "rule; therefore, if not from the muſician himſelf, from ſome other active "intelligence; the ſame, perhaps, which governs bees and ſpiders, and moves "the limbs of thoſe who walk in their ſleep."——See a Treatiſe, entitled, *Siris*, p. 123. 2d edit.

unable to recollect the various ſteps of it, he obtains the reſult by a ſort of inſpiration. This laſt ſuppoſition would be perfectly analogous to Dr. Hartley's doctrine concerning the nature of our habitual exertions.

THE only plauſible objection which, I think, can be offered to the principles I have endeavoured to eſtabliſh on this ſubject, is founded on the aſtoniſhing, and almoſt incredible rapidity, they neceſſarily ſuppoſe in our intellectual operations.—When a perſon, for example, reads aloud; there muſt, according to this doctrine, be a ſeparate volition preceding the articulation of every letter; and it has been found, by actual trial *, that it is poſſible to pronounce about two thouſand letters in a minute. Is it reaſonable to ſuppoſe, that the mind is capable of ſo many different acts in an interval of time ſo very inconſiderable?

WITH reſpect to this objection, it may be obſerved, in the firſt place, that all arguments againſt the foregoing doctrine with reſpect to our habitual exertions, in ſo far as they are founded on the inconceivable rapidity which they ſuppoſe in our intellectual operations, apply equally to the common doctrine concerning our perception of diſtance by the eye. But this is not all. To what does the ſuppoſition amount, which is conſidered as ſo incredible? Only to this, that

* Incredibili velocitate peraguntur et repetuntur muſculorum contractiones. Docent curſus, præſertim quadrupedum; vel lingua, quæ quadringinta vocabula, forte bis mille literas, exprimit, ſpatio temporis quod *minutum* vocare ſolemus, quamvis ad multas literas exprimendas plures muſculorum contractiones requirantur.

Conſpectus Medicinæ Theoreticæ, Auct. Jac. Gregory. *Edit. altera*, p. 171.

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the mind is ſo formed, as to be able to carry on certain intellectual proceſſes, in intervals of time too ſhort to be eſtimated by our faculties; a ſuppoſition which, ſo far from being extravagant, is ſupported by the analogy of many of our moſt certain concluſions in natural philoſophy. The diſcoveries made by the microſcope have laid open to our ſenſes a world of wonders, the exiſtence of which hardly any man would have admitted upon inferior evidence; and have gradually prepared the way for thoſe phyſical ſpeculations, which explain ſome of the moſt extraordinary phenomena of nature, by means of modifications of matter far too ſubtile for the examination of our organs. Why then ſhould it be conſidered as unphiloſophical, after having demonſtrated the exiſtence of various intellectual proceſſes which eſcape our attention in conſequence of their rapidity, to carry the ſuppoſition a little farther, in order to bring under the known laws of the human conſtitution, a claſs of mental operations, which muſt otherwiſe remain perfectly inexplicable? Surely, our ideas of time are merely relative, as well as our ideas of extenſion; nor is there any good reaſon for doubting, that, if our powers of attention and memory were more perfect than they are, ſo as to give us the ſame advantage in examining rapid events, which the microſcope gives for examining minute portions of extenſion, they would enlarge our views with reſpect to the intellectual world, no leſs than that inſtrument has with reſpect to the material.

It may, perhaps, contribute to remove, ſtill more completely, ſome of the ſcruples which are naturally ſuggeſted by the foregoing doctrine, to remark, that, as the great uſe of attention

attention and memory is to enable us to treaſure up the reſults of our experience and reflexion for the future regulation of our conduct, it would have anſwered no purpoſe for the author of our nature to have extended their province to thoſe intervals of time, which we have no occaſion to eſtimate in the common buſineſs of life. All the intellectual proceſſes I have mentioned are ſubſervient to ſome particular end, either of perception or of action; and it would have been perfectly ſuperfluous, if, after this end were gained, the ſteps which are inſtrumental in bringing it about, were all treaſured up in the memory. Such a conſtitution of our nature would have had no other effect but to ſtore the mind with a variety of uſeleſs particulars.

After all I have ſaid, it will perhaps be ſtill thought, that ſome of the reaſonings I have offered are too hypothetical; and it is even poſſible, that ſome may be diſpoſed rather to diſpute the common theory of viſion, than admit the concluſions I have endeavoured to eſtabliſh. To ſuch, I flatter myſelf that the following conſiderations may be of uſe, as they afford a more palpable inſtance, than any I have yet mentioned, of the rapidity with which the thoughts may be trained by practice, to ſhift from one thing to another.

When an equilibriſt balances a rod upon his finger, not only the attention of his mind, but the obſervation of his eye, is conſtantly requiſite.—It is evident that the part of his body which ſupports the object is never wholly at reſt; otherwiſe the object would no more ſtand upon it, than if placed in the ſame poſition upon a table. The equilibriſt, therefore, muſt watch, in the very beginning, every inclination of the object from

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from the proper poſition, in order to counteract this inclination by a contrary movement. In this manner, the object has never time to fall in any one direction, and is ſupported in a way ſomewhat analogous to that in which a top is ſupported on a pivot, by being made to ſpin upon an axis.—That a perſon ſhould be able to do this in the caſe of a ſingle object, is curious; but that he ſhould be able to balance in the ſame way, two, or three, upon different parts of his body, and at the ſame time balance himſelf on a ſmall cord or wire, is indeed wonderful. Nor is it poſſible to conceive that, in ſuch an inſtance, the mind, at one and the ſame moment, attends to theſe different equilibriums; for it is not merely the attention which is requiſite, but the eye. We muſt therefore conclude, that both of theſe are directed ſucceſſively to the different equilibriums, but change from one object to another with ſuch velocity, that the effect, with reſpect to the experiment, is the ſame as if they were directed to all the objects conſtantly.

It is worth while to remark farther, with reſpect to this laſt illuſtration, *that it affords direct evidence of the poſſibility of* our exerting acts of the will, which we are unable to recollect; for the movements of the equilibriſt do not ſucceed each other in a regular order, like thoſe of the harpſichord player, in performing a piece of muſic; but muſt in every inſtance be regulated by accidents, which may vary in numberleſs reſpects, and which, indeed, muſt vary in numberleſs reſpects, every time he repeats the experiment: and therefore, although, in the former caſe, we ſhould ſuppoſe, with Hartley, "that the motions cling to one another, and to the impreſſions of the "notes,

" notes, in the way of aſſociation, without any intervention of " the ſtate of mind called will," yet, in this inſtance, even the poſſibility of ſuch a ſuppoſition is directly contradicted by the fact.

THE dexterity of jugglers, (which, by the way, merits a greater degree of attention from philoſophers, than it has yet attracted,) affords many curious illuſtrations of the ſame doctrine. The whole of this art ſeems to me to be founded on this principle; that it is poſſible for a perſon, by long practice, to acquire a power, not only of carrying on certain intellectual proceſſes more quickly than other men, (for all the feats of legerdemain ſuppoſe the exerciſe of obſervation, thought, and volition,) but of performing a variety of movements with the hand, before the eyes of a company, in an interval of time too ſhort to enable the ſpectators to exert that degree of attention, which is neceſſary to lay a foundation for memory

As ſome philoſophers have diſputed the influence of the will in the caſe of habits, ſo others (particularly Stahl and his followers) have gone into the oppoſite extreme, by referring to the will all the vital motions. If it be admitted, (ſay theſe philoſophers,) that there are inſtances in which we will an effect, without being able to make it an object of attention, is it not poſſible that, what we commonly call the vital and involuntary motions, may be the conſequences of our own thought and volition? But there is ſurely a wide difference between thoſe caſes, in which the mind was at firſt conſcious of thought and

* See Note [E].

volition,

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volition, and gradually loſt the power of attending to them, from the growing rapidity of the intellectual proceſs; and a caſe in which the effect itſelf is perfectly unknown to the bulk of mankind, even after they arrive at maturity, and in which this effect has continued to take place with the moſt perfect regularity, from the very beginning of their animal exiſtence, and long before the firſt dawn of either reflexion or experience.

SOME of the followers of Stahl have ſtated the fact rather inaccurately, even with reſpect to our habitual exertions. Thus Dr. Porterfield, in his Treatiſe on the Eye, is at pains to prove, that the ſoul may think and will without knowledge or conſciouſneſs. But this, I own, is to me inconceivable. The true ſtate of the fact, I apprehend, is, that the mind may think and will, without attending to its thoughts and volitions, ſo as to be able afterwards to recollect them.—Nor is this merely a verbal criticiſm; for there is an important difference between conſciouſneſs and attention, which it is very neceſſary to keep in view, in order to think upon this ſubject with any degree of preciſion. * The one is an involuntary ſtate of the mind; the other is a voluntary act; the one has no immediate connexion with memory; but the other is ſo eſſentially ſub-

* The diſtinction between attention and conſciouſneſs is pointed out by Dr. Reid, in his Eſſays on the Intellectual Powers of Man, p. 60. "Attention is "a voluntary act; it requires an active exertion to begin and to continue it; "and it may be continued as long as we will; but conſciouſneſs is involuntary, "and of no continuance, changing with every thought." The ſame author has remarked, that theſe two operations of the mind have been frequently confounded by philoſophers, and particularly by Mr. Locke.

ſervient

ſervient to it, that, without ſome degree of it, the ideas and perceptions which paſs through the mind, ſeem to leave no trace behind them. CHAP. II.

WHEN two perſons are ſpeaking to us at once, we can attend to either of them at pleaſure, without being much diſturbed by the other. If we attempt to liſten to both, we can underſtand neither. The fact ſeems to be, that when we attend conſtantly to one of the ſpeakers, the words ſpoken by the other make no impreſſion on the memory, in conſequence of our not attending to them; and affect us as little as if they had not been uttered. This power, however, of the mind to attend to either ſpeaker at pleaſure, ſuppoſes that it is, at one and the ſame time, conſcious of the ſenſations which both produce.

ANOTHER well-known fact may be of uſe in illuſtrating the ſame diſtinction. A perſon who accidentally loſes his ſight, never fails to improve gradually in the ſenſibility of his touch.—Now, there are only two ways of explaining this. The one is, that, in conſequence of the loſs of the one ſenſe, ſome change takes place in the phyſical conſtitution of the body, ſo as to improve a different organ of perception. The other, that the mind gradually acquires a power of attending to and remembering thoſe ſlighter ſenſations of which it was formerly conſcious, but which, from our habits of inattention, made no impreſſion whatever on the memory. No one, ſurely, can heſitate for a moment, in pronouncing which of theſe two ſuppoſitions is the more philoſophical.

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HAVING treated, at conſiderable length, of thoſe habits in which both mind and body are concerned, I proceed to make a few remarks on ſome phenomena which are purely intellectual; and which, I think, are explicable on the ſame principles with thoſe which have been now under our review.

EVERY perſon who has ſtudied the elements of geometry, muſt have obſerved many caſes in which the truth of a theorem ſtruck him the moment he heard the enunciation. I do not allude to thoſe theorems the truth of which is obvious almoſt to ſenſe; ſuch as, that any two ſides of a triangle are greater than the third ſide; or that one circle cannot cut another circle in more than two points; but to ſome propoſitions with reſpect to quantity, conſidered abſtractly, (to ſome, for example, in the fifth book of Euclid,) which almoſt every ſtudent would be ready to admit without a demonſtration. Theſe propoſitions, however, do by no means belong to the claſs of axioms; for their evidence does not ſtrike every perſon equally, but requires a certain degree of quickneſs to perceive it. At the ſame time, it frequently happens, that, although we are convinced the propoſition is true, we cannot ſtate immediately to others upon what our conviction is founded. In ſuch caſes, I think it highly probable, that before we give our aſſent to the theorem, a proceſs of thought * has paſſed through the mind, but has paſſed through it ſo quickly, that we cannot, without difficulty, arreſt our ideas in their rapid ſucceſſion, and ſtate

* Of the nature of theſe proceſſes of thought, I ſhall treat fully in another part of my work, under the article of Reaſoning. I have expreſſed myſelf concerning them in this chapter, in as general terms as poſſible.

them

them to others in their proper and logical order. It is ſome confirmation of this theory, that there are no propoſitions of which it is more difficult to give a legitimate proof from firſt principles, than of thoſe which are only removed a few ſteps from the claſs of axioms; and that thoſe men who are the moſt remarkable for their quick perception of mathematical truth, are ſeldom clear and methodical in communicating their knowledge to others.—A man of a moderate degree of quickneſs, the very firſt time he is made acquainted with the fundamental principles of the method of fluxions, or of the method of prime and ultimate ratios, is almoſt inſtantaneouſly ſatisfied of their truth; yet how difficult is it to demonſtrate theſe principles rigorouſly!

WHAT I have now ſaid with reſpect to mathematics, may be applied in a great meaſure to the other branches of knowledge. How many queſtions daily occur to us, in morals, in politics, and in common life; in conſidering which, we almoſt inſtantaneouſly ſee where the truth lies, although we are not in a condition, all at once, to explain the grounds of our conviction! Indeed, I apprehend, there are few, even among thoſe who have devoted themſelves to ſtudy, but who have not been habituated to communicate their knowledge to others, who are able to exhibit, in their natural order, the different ſteps of any inveſtigation by which they have been led to form a particular concluſion. The common obſervation, therefore, that an obſcure elocution always indicates an imperfect knowledge of the ſubject; although it may perhaps be true with reſpect to men who have cultivated the art of ſpeaking, is by no

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means to be relied on as a general rule, in judging of the talents of thoſe whoſe ſpeculations have been carried on with a view merely to their own private ſatisfaction.

In the courſe of my own experience, I have heard of more than one inſtance, of men who, without any mathematical education, were able, on a little reflexion, to give a ſolution of any ſimple algebraical problem; and who, at the ſame time, were perfectly incapable of explaining by what ſteps they obtained the reſult. In theſe caſes, we have a direct proof of the poſſibility of inveſtigating even truths which are pretty remote, by an intellectual proceſs, which, as ſoon as it is finiſhed, vaniſhes almoſt entirely from the memory.—It is probable, that ſomething of the ſame kind takes place much more frequently in the other branches of knowledge, in which our reaſonings conſiſt commonly but of a few ſteps. Indeed, I am inclined to think, that it is in this way that by far the greater part of our ſpeculative concluſions are formed.

There is no talent, I apprehend, ſo eſſential to a public ſpeaker, as to be able to ſtate clearly every different ſtep of thoſe trains of thought by which he himſelf was led to the concluſions he wiſhes to eſtabliſh. Much may be here done by ſtudy and experience. Even in thoſe caſes in which the truth of a propoſition ſeems to ſtrike us inſtantaneouſly, although we may not be able, at firſt, to diſcover the media of proof, we ſeldom fail in the diſcovery by perſeverance.—Nothing contributes ſo much to form this talent as the ſtudy of metaphyſics; not the abſurd metaphyſics of the ſchools, but that

that ſtudy which has the operations of the mind for its object. By habituating us to reflect on the ſubjects of our conſciouſneſs, it enables us to retard, in a conſiderable degree, the current of thought; to arreſt many of thoſe ideas, which would otherwiſe eſcape our notice; and to render the arguments which we employ for the conviction of others, an exact tranſcript of thoſe trains of inquiry and reaſoning, which originally led us to form our opinions.

THESE obſervations lead me to take notice of an important diſtinction between the intellectual habits of men of ſpeculation and of action. The latter, who are under a neceſſity of thinking and deciding on the ſpur of the occaſion, are led to cultivate, as much as poſſible, a quickneſs in their mental operations; and ſometimes acquire it in ſo great a degree, that their judgments ſeem to be almoſt intuitive. To thoſe, on the other hand, who have not merely to form opinions for themſelves, but to communicate them to others, it is neceſſary to retard the train of thought as it paſſes in the mind, ſo as to be able afterwards to recollect every different ſtep of the proceſs; a habit, which, in ſome caſes, has ſuch an influence on the intellectual powers, that there are men, who, even in their private ſpeculations, not only make uſe of words as an inſtrument of thought, but form theſe words into regular ſentences.

IT may perhaps appear, at firſt, a paradoxical obſervation, that one great employment of philoſophers, in a refined age,

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is to bring to light, and arrange, thoſe rapid and confuſed trains of thought, which appear from the ſtructure of languages, and from the monuments of ancient laws and governments, to have paſſed through the minds of men in the moſt remote and unenlightened periods. In proof, however, of this, it is ſufficient to mention, the ſyſtematical analogy which we find, to a certain degree, running through the ſtructure of the moſt imperfect tongues, (for example, in the formation of the different parts of the verbs,) and thoſe general principles, which the philoſophical lawyer traces amidſt an apparent chaos of precedents and ſtatutes. In the language, too, of the rudeſt tribe, we find words transferred from one ſubject to another, which indicate, in the mind of the individual who firſt made the transference, ſome perception of reſemblance or of analogy. Such transferences can hardly be aſcribed to accident, but may be conſidered as proofs that the analogies which the philoſopher afterwards points out between the objects which are diſtinguiſhed by the ſame name, had been perceived by the inventors of language, although it is more than probable that they never expreſſed them in words, nor could even have explained them if they had been queſtioned on the ſubject.

NOR will this appear a bold or incredible ſuppoſition, if we reflect on the ſagacity and ingenuity which ſavages, and even peaſants, diſcover, in overcoming the difficulties which occur in their ſituation. They do not, indeed, engage in long proceſſes of abſtract reaſoning, for which they have no inclination, and which

which it is impoſſible to carry on without the uſe of a cultivated and a copious language; but, when preſſed by preſent circumſtances, they combine means to accompliſh particular ends, in a manner which indicates the exerciſe both of invention and of reaſoning. It is probable that ſuch proceſſes are carried on in their minds, with much leſs aſſiſtance from language, than a philoſopher would derive on a ſimilar occaſion; and it is almoſt certain, that they would find themſelves perfectly incapable of communicating to others the ſteps by which they were led to their concluſions. In conſequence of theſe circumſtances, the attainments of the human mind, in its ruder ſtate, periſh with the individual, without being recorded in writing, or perhaps expreſſed in words; and we are left to infer them indirectly from the ſtructure of language, or from the monuments of ancient cuſtoms and inſtitutions.

When a train of thought leads to any intereſting concluſion, or excites any pleaſant feeling, it becomes peculiarly difficult to arreſt our fleeting ideas; becauſe the mind, when once it has felt the pleaſure, has little inclination to retrace the ſteps by which it arrived at it. This is one great cauſe of the difficulty attending philoſophical criticiſm. When a critic explains to us, why we are pleaſed with any particular beauty, or offended with any defect, it is evident, that if his theory be juſt, the circumſtances which he points out as the foundation of our pleaſure or uneaſineſs, muſt have occurred to our minds before we were pleaſed with the beauty, or offended with the defect. In ſuch caſes, it ſometimes happens, when a critic has been fortunate in his theory, that we recognize at firſt ſight

our

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our old ideas, and, without any farther conſideration, are ready to bear teſtimony to the truth, from our own conſciouſneſs. So very difficult, however, is it to attend to the ideas which excite ſuch feelings, that it often appears to be doubtful, whether a theory be right or wrong; and that where there is every reaſon to believe that the pleaſure is produced in all men in the ſame way, different critics adopt different theories with reſpect to its cauſe. It is long practice alone, joined to what is commonly called a metaphyſical turn of mind, (by which I think is chiefly to be underſtood, a capacity of reflecting on the ſubjects of our conſciouſneſs,) that can render ſuch efforts of attention eaſy. Exquiſite ſenſibility, ſo far from being uſeful in this ſpecies of criticiſm, both gives a diſreliſh for the ſtudy, and diſqualifies for purſuing it.

BEFORE we leave the ſubject of attention, it is proper to take notice of a queſtion which has been ſtated with reſpect to it; whether we have the power of attending to more than one thing at one and the ſame inſtant; or, in other words, whether we can attend at one and the ſame inſtant, to objects which we can attend to ſeparately*? This queſtion has, if I am not miſtaken, been already decided by ſeveral philoſophers in the negative; and I acknowledge, for my own part, that although their opinion has not only been called in queſtion by others, but even treated with ſome degree of contempt as altogether hypothetical, it appears to me to be the moſt reaſonable and philoſophical that we can form on the ſubject.

* I have added this explanation to obviate the queſtion, what is meant by *one* object?

THERE

THERE is indeed a great variety of caſes, in which the mind apparently exerts different acts of attention at once; but from the inſtances which have already been mentioned, of the aſtoniſhing rapidity of thought, it is obvious, that all this may be explained, without ſuppoſing theſe acts to be co-exiſtent; and I may even venture to add, it may all be explained in the moſt ſatisfactory manner, without aſcribing to our intellectual operations, a greater degree of rapidity than that with which we know from the fact that they are ſometimes carried on. The effect of practice in increaſing this capacity of apparently attending to different things at once, renders this explanation of the phenomenon in queſtion, more probable than any other.

THE caſe of the equilibriſt and rope-dancer already mentioned, is particularly favourable to this explanation; as it affords direct evidence of the poſſibility of the mind's exerting different ſucceſſive acts in an interval of time ſo ſhort, as to produce the ſame ſenſible effect, as if they had been exerted at one and the ſame moment. In this caſe, indeed, the rapidity of thought is ſo remarkable, that if the different acts of the mind were not all neceſſarily accompanied with different movements of the eye, there can be no reaſon for doubting, that the philoſophers, whoſe doctrine I am now controverting, would have aſſerted, that they are all mathematically co-exiſtent.

UPON a queſtion, however, of this ſort, which does not admit of a perfectly direct appeal to the fact, I would by no means be underſtood to decide with confidence; and therefore I ſhould wiſh the concluſions I am now to ſtate, to be received

CHAP. II. as only conditionallly eſtabliſhed. They are neceſſary and obvious conſequences of the general principle, "that the mind "can only attend to one thing at once;" but muſt ſtand or fall with the truth of that ſuppoſition.

It is commonly underſtood, I believe, that, in a concert of muſic, a good ear can attend to the different parts of the muſic ſeparately, or can attend to them all at once, and feel the full effect of the harmony. If the doctrine, however, which I have endeavoured to eſtabliſh, be admitted, it will follow, that, in the latter caſe, the mind is conſtantly varying its attention from the one part of the muſic to the other, and that its operations are ſo rapid, as to give us no perception of an interval of time.

The ſame doctrine leads to ſome curious concluſions with reſpect to viſion. Suppoſe the eye to be fixed in a particular poſition, and the picture of an object to be painted on the retina. Does the mind perceive the complete figure of the object at once, or is this perception the reſult of the various perceptions we have of the different points in the outline? With reſpect to this queſtion, the principles already ſtated lead me to conclude, that the mind does at one and the ſame time perceive every point in the outline of the object, (provided the whole of it be painted on the retina at the ſame inſtant,) for perception, like conſciouſneſs, is an involuntary operation. As no two points, however, of the outline are in the ſame direction, every point, by itſelf, conſtitutes juſt as diſtinct an object of attention to the mind, as if it were ſeparated by an interval

of empty ſpace from all the reſt. If the doctrine therefore formerly ſtated be juſt, it is impoſſible for the mind to attend to more than one of theſe points at once; and as the perception of the figure of the object, implies a knowledge of the relative ſituation of the different points with reſpect to each other, we muſt conclude, that the perception of figure by the eye, is the reſult of a number of different acts of attention. Theſe acts of attention, however, are performed with ſuch rapidity, that the effect, with reſpect to us, is the ſame as if the perception were inſtantaneous.

In farther confirmation of this reaſoning, it may be remarked, that if the perception of viſible figure were an immediate conſequence of the picture on the retina, we ſhould have, at the firſt glance, as diſtinct an idea of a figure of a thouſand ſides, as of a triangle or a ſquare. The truth is, that when the figure is very ſimple, the proceſs of the mind is ſo rapid, that the perception ſeems to be inſtantaneous; but when the ſides are multiplied beyond a certain number, the interval of time neceſſary for theſe different acts of attention becomes perceptible.

It may perhaps be aſked, what I mean by a *point* in the outline of a figure, and what it is that conſtitutes this point *one* object of attention? The anſwer, I apprehend, is, that this point is the *minimum viſibile*. If the point be leſs, we cannot perceive it: if it be greater, it is not all ſeen in one direction.

If theſe obſervations be admitted, it will follow, that, without the faculty of memory, we could have had no perception of viſible figure.

CHAPTER THIRD.

On Conception.

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BY Conception, I mean that power of the mind, which enables it to form a notion of an abſent object of perception; or of a ſenſation which it has formerly felt. I do not contend that this is excluſively the proper meaning of the word, but I think that the faculty which I have now defined, deſerves to be diſtinguiſhed by an appropriated name.

CONCEPTION is often confounded with other powers. When a painter makes a picture of a friend, who is abſent or dead, he is commonly ſaid to paint from memory: and the expreſſion is ſufficiently correct for common converſation. But in an analyſis of the mind, there is ground for a diſtinction. The power of conception enables him to make the features of his friend an object of thought, ſo as to copy the reſemblance; the power of memory recogniſes theſe features as a former object of perception. Every act of memory includes an idea of the paſt; conception implies no idea of time whatever *.

* Shakeſpeare calls this power "the mind's eye."
Hamlet.—"My father! Methinks I ſee my father.
Horatio.—"Where, my Lord;
Hamlet.—"In my mind's eye, Horatio."
Act 1. Scene 4.

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ACCORDING to this view of the matter, the word *conception* correſponds to what was called by the ſchool-men *ſimple apprehenſion; with this difference only, that they included, under this* name, our apprehenſion of general propoſitions; whereas I ſhould wiſh to limit the application of the word *conception* to our ſenſations, and the objects of our perceptions. Dr. Reid, in his Inquiry, ſubſtitutes the word *conception* inſtead of the ſimple apprehenſion of the ſchools, and employs it in the ſame extenſive ſignification. I think it may contribute to make our ideas more diſtinct, to reſtrict its meaning:—and for ſuch a reſtriction, we have the authority of philoſophers in a caſe perfectly analogous.—In ordinary language, we apply the ſame word *perception*, to the knowledge which we have by our ſenſes of external objects, and to our knowledge of ſpeculative truth: and yet an author would be juſtly cenſured, who ſhould treat of theſe two operations of the mind under the ſame article of perception. I apprehend there is as wide a difference between the conception of a truth, and the conception of an abſent object of ſenſe, as between the perception of a tree, and the perception of a mathematical theorem.—I have therefore taken the liberty to diſtinguiſh alſo the two former operations of the mind: and under the article of *conception*, ſhall confine myſelf to that faculty whoſe province it is to enable us to form a notion of our paſt ſenſations, or of the objects of ſenſe that we have formerly perceived.

CONCEPTION is frequently uſed as ſynonymous with imagination. Dr. Reid ſays, that, "imagination, in its proper "ſenſe, ſignifies a lively conception of objects of ſight." "This "is

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" is a talent" (he remarks) " of importance to poets and " orators; and deſerves a proper name, on account of its con- " nexion with their arts." He adds, that " imagination is dif- " tinguiſhed from conception, as a part from a whole."

I SHALL not inquire, at preſent, into the proper Engliſh meaning of the words *conception* and *imagination*. In a ſtudy ſuch as this, ſo far removed from the common purpoſes of ſpeech, ſome latitude may perhaps be allowed in the uſe of words; provided only we define accurately thoſe we employ, and adhere to our own definitions.

THE buſineſs of conception, according to the account I have given of it, is to preſent us with an exact tranſcript of what we have felt or perceived. But we have, moreover, a power of modifying our conceptions, by combining the parts of different ones together, ſo as to form new wholes of our own creation. I ſhall employ the word *imagination* to expreſs this power: and, I apprehend, that this is the proper ſenſe of the word; if imagination be the power which gives birth to the productions of the poet and the painter. This is not a ſimple faculty of the mind. It preſuppoſes abſtraction, to ſeparate from each other qualities and circumſtances which have been perceived in conjunction; and alſo judgment and taſte to direct us in forming the combinations. If they are made wholly at random, they are proofs of inſanity *.

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* In common diſcourſe, we often uſe the phraſe of *thinking upon an object*, to expreſs what I here call, the *conception* of it.——In the following paſſage, Shakeſpeare

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THE firſt remarkable fact which ſtrikes us with reſpect to conception is, that we can conceive the objects of ſome ſenſes much more eaſily than thoſe of others. Thus we can conceive an abſent viſible object, ſuch as a building that is familiar to us, much more eaſily than a particular ſound, a particular taſte, or a particular pain, which we have formerly felt. It is probable, however, that this power might be improved in the caſe of ſome of our ſenſes. Few people, I believe, are able to form a very diſtinct conception of ſounds; and yet it is certain, that, by practice, a perſon may acquire a power of amuſing himſelf with reading written muſic. And in the caſe of poetical numbers, it is univerſally known, that a reader may enjoy the harmony of the verſe, without articulating the words, even in a whiſper. In ſuch caſes, I take for granted, that our pleaſure ariſes from a very ſtrong conception of the ſounds which we have been accuſtomed to aſſociate with particular written characters.

THE peculiarity in the caſe of viſible objects, ſeems to ariſe from this; that when we think of a ſound or of a taſte, the object

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Shakeſpeare uſes the former of theſe phraſes, and the words *imagination* and *apprehenſion* as ſynonymous with each other.

——————Who can hold a fire in his hand,
By thinking on the froſty Caucaſus?
Or cloy the hungry edge of appetite,
By bare imagination of a feaſt?
Or wallow naked in December's ſnow,
By thinking on fantaſtic ſummer's heat?
Oh no! the apprehenſion of the good
Gives but the greater feeling to the worſe.

K. RICHARD II. Act 1. Scene 6.

of

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of our conception is one ſingle detached ſenſation; whereas every viſible object is complex; and the conception which we form of it as a whole, is aided by the aſſociation of ideas. To perceive the force of this obſervation, it is neceſſary to recollect what was formerly ſaid on the ſubject of attention. As we cannot at one inſtant attend to every point of the picture of an object on the retina, ſo, I apprehend, we cannot at one inſtant form a conception of the whole of any viſible object; but that our conception of the object as a whole, is the reſult of many conceptions. The aſſociation of ideas connects the different parts together, and preſents them to the mind in their proper arrangement; and the various relations which theſe parts bear to one another in point of ſituation, contribute greatly to ſtrengthen the aſſociations. It is ſome confirmation of this theory, that it is more eaſy to remember a ſucceſſion of ſounds, than any particular ſound which we have heard detached and unconnected.

THE powers of conceiving viſible objects, like all other powers that depend on the aſſociation of ideas, may be wonderfully improved by habit. A perſon accuſtomed to drawing, retains a much more perfect notion of a building or of a landſcape which he has ſeen, than one who has never practiſed that art. A portrait-painter traces the form of the human body from memory, with as little exertion of attention, as he employs in writing the letters which compoſe his name.

IN the power of conceiving colours, too, there are ſtriking differences among individuals: and, indeed, I am inclined to ſuſpect,

ſuſpect, that, in the greater number of inſtances, the ſuppoſed defects of ſight in this reſpect, ought to be aſcribed rather to a defect in the power of conception. One thing is certain, that we often ſee men who are perfectly ſenſible of the difference between two colours when they are preſented to them, who cannot give names to theſe colours, with confidence, when they ſee them apart; and are perhaps apt to confound the one with the other. Such men, it ſhould ſeem, feel the ſenſation of colour like other men, when the object is preſent, but are incapable (probably in conſequence of ſome early habit of inattention) to conceive the ſenſation diſtinctly when the object is removed. Without this power of conception, it is evidently impoſſible for them, however lively their ſenſations may be, to give a name to any colour; for the application of the name ſuppoſes not only a capacity of receiving the ſenſation, but a power of comparing it with one formerly felt. At the ſame time, I would not be underſtood by theſe obſervations to deny, that there are caſes, in which there is a natural defect of the organ in the perception of colour. In ſome caſes, perhaps, the ſenſation is not felt at all; and in others, the faintneſs of the ſenſation may be one cauſe of thoſe habits of inattention, from which the incapacity of conception has ariſen.

A TALENT for lively deſcription, at leaſt in the caſe of ſenſible objects, depends chiefly on the degree in which the deſcriber poſſeſſes the power of conception. We may remark, even in common converſation, a ſtriking difference among individuals in this reſpect. One man, in attempting to convey

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a notion of any object he has ſeen, ſeems to place it before him, and to paint from actual perception: another, although not deficient in a ready elocution, finds himſelf in ſuch a ſituation confuſed and embarraſſed among a number of particulars imperfectly apprehended, which crowd into his mind without any juſt order and connection. Nor is it merely to the accuracy of our deſcriptions that this power is ſubſervient: it contributes more than any thing elſe to render them ſtriking and expreſſive to others, by guiding us to a ſelection of ſuch circumſtances as are moſt prominent and characteriſtical; inſomuch that I think it may reaſonably be doubted, if a perſon would not write a happier deſcription of an object from the conception than from the actual perception of it. It has been often remarked, that the perfection of deſcription does not conſiſt in a minute ſpecification of circumſtances, but in a judicious ſelection of them; and that the beſt rule for making the ſelection is, to attend to the particulars that make the deepeſt impreſſion on our own minds. When the object is actually before us, it is extremely difficult to compare the impreſſions which different circumſtances produce; and the very thought of writing a deſcription, would prevent the impreſſions which would otherwiſe take place. When we afterwards conceive the object, the repreſentation of it we form to ourſelves, however lively, is merely an outline; and is made up of theſe circumſtances, which really ſtruck us moſt at the moment; while others of leſs importance are obliterated. The impreſſion, indeed, which a circumſtance makes on the mind, will vary conſiderably with the degree of a perſon's taſte; but I am inclined to think, that a man of lively conceptions, who paints from theſe, while his mind is yet warm

warm from the original ſcene, can hardly fail to ſucceed in deſcriptive compoſition. CHAP. III.

THE facts and obſervations which I have now mentioned, are applicable to conception, as diſtinguiſhed from imagination. The two powers, however, are very nearly allied; and are frequently ſo blended, that it is difficult to ſay, to which of the two, ſome particular operations of the mind are to be referred. There are alſo many general facts which hold equally with reſpect to both. The obſervations which follow, if they are well founded, are of this number, and might have been introduced with equal propriety under either article. I mention them here, as I ſhall have occaſion to refer to them in the courſe of the following work, in treating of ſome ſubjects, which will naturally occur to our examination, before we have another opportunity of conſidering this part of our conſtitution.

IT is a common, I believe I may ſay an univerſal, doctrine among logicians, that conception (or imagination, which is often uſed as ſynonymous with it) is attended with no belief of the exiſtence of its object. "Perception," ſays Dr. Reid, "is attended with a belief of the preſent exiſtence of its object; "memory, with a belief of its paſt exiſtence; but imagination "is attended with no belief at all; and was therefore called "by the ſchool-men, *apprehenſio ſimplex*."

IT is with great diffidence, that I preſume to call in queſtion a principle, which has been ſo generally received; yet there are ſeveral circumſtances which lead me to doubt of it. If it were

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a ſpecifical diſtinction between perception and imagination, that the former is always attended with belief, and the latter with none; then the more lively our imagination were of any object, and the more completely that object occupied the attention, the leſs ſhould we be apt to believe its exiſtence; for it is reaſonable to think, that when any of our powers is employed ſeparately from the reſt, and there is nothing to withdraw the attention from it, the laws which regulate its operation will be moſt obvious to our obſervation, and will be moſt completely diſcriminated from thoſe which are characteriſtical of the other powers of the mind. So very different however is the fact, that it is matter of common remark, that when imagination is very lively, we are apt to aſcribe to its objects a real exiſtence, as in the caſe of dreaming or of madneſs; and we may add, in the caſe of thoſe who, in ſpite of their own general belief of the abſurdity of the vulgar ſtories of apparitions, dare not truſt themſelves alone with their own imaginations in the dark. That imagination is in theſe inſtances attended with belief, we have all the evidence that the nature of the thing admits of; for we feel and act in the ſame manner as we ſhould do, if we believed that the objects of our attention were real; which is the only proof that metaphyſicians produce, or can produce, of the belief which accompanies perception.

In theſe caſes, the fact that I wiſh to eſtabliſh is ſo ſtriking, that it has never been called in queſtion; but in moſt caſes, the impreſſion which the objects of imagination make on the mind is ſo momentary, and is ſo immediately corrected by the ſurrounding

rounding objects of perception, that it has not time to influence our conduct. Hence we are apt to conclude on a ſuperficial view, that imagination is attended with no belief; and the concluſion is ſurely juſt in moſt caſes, if by belief we mean a permanent conviction which influences our conduct. But if the word is uſed in the ſtrict logical ſenſe, I am inclined to think, after the moſt careful attention to what I experience in myſelf, that the exerciſe both of conception and imagination is always accompanied with a belief that their objects exiſt *. When a painter conceives the face and figure of an abſent friend,

* As the foregoing reaſoning, though ſatisfactory to myſelf, has not appeared equally ſo to ſome of my friends; I ſhould wiſh the reader to conſider the remarks which I now offer, as amounting rather to a query, than to a decided opinion.

May I take the liberty of adding, that one of the arguments which I have ſtated, in oppoſition to the common doctrine concerning imagination, appears to me to be authoriſed, in ſome meaſure, by the following reaſoning of Dr. Reid's on a different ſubject? In conſidering thoſe ſudden burſts of paſſion, which lead us to wreak our vengeance upon inanimate objects, he endeavours to ſhew, that we have, in ſuch caſes, a momentary belief that the object is alive. "I confeſs," ſays he, "it ſeems to me impoſſible, that there ſhould be "reſentment againſt a thing, which, at that very moment, is conſidered as "inanimate; and conſequently incapable either of intending hurt, or of being "puniſhed.—There muſt, therefore, I conceive, be ſome momentary notion "or conception, that the object of our reſentment is capable of puniſhment."

In another paſſage, the ſame author remarks, that, "men may be governed, "in their practice, by a belief, which, in ſpeculation, they reject."

"I knew a man," (ſays he,) "who was as much convinced as any man, "of the folly of the popular belief of apparitions in the dark: yet he could not "ſleep in a room alone, nor go alone into a room in the dark. Can it be ſaid, "that his fear did not imply a belief of danger? This is impoſſible. Yet his "philoſophy

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friend, in order to draw his picture, he believes for the moment that his friend is before him. The belief, indeed, is only momentary; for it is extremely difficult, in our waking hours, to keep up a ſteady and undivided attention to any object we conceive or imagine; and, as ſoon as the conception or the imagination is over, the belief which attended it is at an end. We find that we can recal and diſmiſs the objects of theſe powers at pleaſure; and therefore we learn to conſider them as creations of the mind, which have no ſeparate and independent exiſtence.

THE compatibility of ſuch a ſpeculative diſbelief, as I have here ſuppoſed, of the exiſtence of an object, with a contrary momentary belief, may perhaps be more readily admitted, if the following experiment be conſidered with attention.

" philoſophy convinced him, that he was in no more danger in the dark when " alone, than with company. Here an unreaſonable belief, which was merely " a prejudice of the nurſery, ſtuck ſo faſt as to govern his conduct, in oppo- " ſition to his ſpeculative belief as a philoſopher, and a man of ſenſe."

" There are few perſons who can look down from the battlement of a very " high tower without fear; while their reaſon convinces them, that they are in " no more danger than when ſtanding upon the ground."

Theſe facts are eaſily explicable, on the ſuppoſition, that whenever the objects of imagination engroſs the attention wholly, (which they may do, in oppoſition to any ſpeculative opinion with reſpect to their non-exiſtence,) they produce a temporary belief of their reality.—Indeed, in the laſt paſſage, Dr. Reid ſeems to admit this to be the caſe; for, to ſay that a man who has a dread of apparitions, believes himſelf to be in danger when left alone in the dark, is to ſay, in other words, that he believes (for the time) that the objects of his imagination are real.

SUPPOSE

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SUPPOSE a lighted candle to be ſo placed before a concave mirror, that the image of the flame may be ſeen between the mirror and the eye of the obſerver. In this caſe, a perſon who is acquainted with the principles of optics, or who has ſeen the experiment made before, has ſo ſtrong a ſpeculative conviction of the non-exiſtence of the object in that place where he ſees its image, that he would not heſitate to put his finger to the apparent flame, without any apprehenſion of injury.

SUPPOSE, however, that in ſuch a caſe it were poſſible for the obſerver to baniſh completely from his thoughts all the circumſtances of the experiment, and to confine his attention wholly to his perception; would he not believe the image to be a reality; and would he not expect the ſame conſequences from touching it, as from touching a real body in a ſtate of inflammation? If theſe queſtions be anſwered in the affirmative, it will follow; that the effect of the perception, while it engages the attention completely to itſelf, is to produce belief; and that the ſpeculative diſbelief, according to which our conduct in ordinary caſes is regulated, is the reſult of a recollection of the various circumſtances with which the experiment is accompanied.

IF, in ſuch a caſe as I have now ſuppoſed, the appearance exhibited to us is of ſuch a nature, as to threaten us with any immediate danger, the effect is the ſame as if we were to baniſh from our thoughts the circumſtances of the experiment, and to limit our attention ſolely to what we perceive: for here the belief, which is the firſt effect of the perception, alarms our fears,

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and influences our conduct, before reflexion has time to operate. In a very ingenious optical deception, which was lately exhibited in this city, the image of a flower was preſented to the ſpectator; and when he was about to lay hold of it with his hand, a ſtroke was aimed at him by the image of a dagger. If a perſon who has ſeen this experiment is aſked, in his cooler moments, whether or not he believes the dagger which he ſaw to be real, he will readily anſwer in the negative; and yet the accurate ſtatement of the fact undoubtedly is, that the firſt and the proper effect of the perception is belief; and that the diſbelief he feels, is the effect of ſubſequent reflexion.

THE ſpeculative diſbelief which we feel with reſpect to the illuſions of imagination, I conceive to be analogous to our ſpeculative diſbelief of the exiſtence of the object exhibited to the eye in this optical deception; as our belief that the illuſions of imagination are real, while that faculty occupies the mind excluſively, is analogous to the belief produced by the optical deception while the attention is limited to our perception, and is withdrawn from the circumſtances in which the experiment is made *.

THESE obſervations lead me to take notice of a circumſtance with reſpect to the belief accompanying perception, which it

* It may appear to ſome readers rather trifling to add, and yet to others the remark may not be altogether ſuperfluous, that it is not my intention to inſinuate by the foregoing illuſtrations, that the relation between perception and imagination has the moſt diſtant analogy to that between the perception of the object, and the perception of its optical image.

appears

appears to me neceſſary to ſtate, in order to render Dr. Reid's doctrine on that ſubject completely ſatisfactory. He has ſhewn, that certain ſenſations are, by a law of our nature, accompanied with an irreſiſtible belief of the exiſtence of certain qualities of external objects. But this law extends no farther than to the preſent exiſtence of the quality; that is, to its exiſtence while we feel the correſponding ſenſation. Whence is it then, that we aſcribe to the quality, an exiſtence independent of our perception? I apprehend we learn to do this by experience alone. We find that we cannot, as in the caſe of imagination, diſmiſs or recal the perception of an external object. If I open my eyes, I cannot prevent myſelf from ſeeing the proſpect which is before me. I learn, therefore, to aſcribe to the objects of my ſenſes, not only an exiſtence at the time I perceive them, but an independent and a permanent exiſtence.

It is a ſtrong confirmation of this doctrine, that in ſleep, when (as I flatter myſelf I ſhall afterward ſhew) the influence of the will over the train of our thoughts is ſuſpended, and when, of conſequence, the time of their continuance in the mind is not regulated by us, we aſcribe to the objects of imagination an independent and permanent exiſtence, as we do when awake to the objects of perception. The ſame thing happens in thoſe kinds of madneſs, in which a particular idea takes poſſeſſion of the attention, and occupies it to the excluſion of every thing elſe. Indeed, madneſs ſeems in many caſes to ariſe entirely from a ſuſpenſion of the influence of the will over the ſucceſſion of our thoughts; in conſequence of which, the objects of imagination

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gination appear to have an exiſtence independent of our volition; and are therefore, agreeably to the foregoing doctrine, miſtaken for realities.

NUMBERLESS other illuſtrations of the ſame general fact occur to me; but the following is, I think, one of the moſt ſtriking. I mention it, in preference to the reſt, as it appears to me to connect the doctrine in queſtion with ſome principles which are now univerſally admitted among philoſophers.

THE diſtinction between the original and the acquired perceptions of ſight, is familiarly known to every one who has the ſlighteſt acquaintance with the elements of optics. That this ſenſe, prior to experience, conveys to us the notion of extenſion in two dimenſions only, and that it gives us no information concerning the diſtances at which objects are placed from the eye, are propoſitions which nobody, I preſume, in the preſent ſtate of ſcience, will be diſpoſed to controvert. In what manner we are enabled, by a compariſon between the perceptions of ſight and thoſe of touch, to extend the province of the former ſenſe to a variety of qualities originally perceived by the latter ſenſe only, optical writers have explained at great length; but it is not neceſſary for my preſent purpoſe to enter into any particular details with reſpect to their reaſonings on the ſubject. It is ſufficient for me to remark, that, according to the received doctrine, the original perceptions of ſight become, in conſequence of experience, ſigns of the tangible qualities of external objects, and of the diſtances at which they are placed from the organ; and that, although the knowledge we obtain, in this manner, of theſe qualities

qualities and diſtances, ſeems, from early and conſtant habits, to be an inſtantaneous perception; yet, in many caſes, it implies an exerciſe of the judgment, being founded on a compariſon of a variety of different circumſtances.

FROM theſe principles, it is an obvious conſequence, that the knowledge we obtain, by the eye, of the tangible qualities of bodies, involves the exerciſe of conception, according to the definition of that power which has already been given. In ordinary diſcourſe, indeed, we aſcribe this knowledge, on account of the inſtantaneouſneſs with which it is obtained, to the power of perception; but if the common doctrine on the ſubject be juſt, it is the reſult of a complex operation of the mind; comprehending, firſt, the perception of thoſe qualities, which are the proper and original objects of ſight; and, ſecondly, the conception of thoſe tangible qualities of which the original perceptions of ſight are found from experience to be the ſigns. The notions, therefore, we form, by means of the eye, of the tangible qualities of bodies, and of the diſtances of theſe objects from the organ, are mere conceptions; ſtrongly, and indeed indiſſolubly, aſſociated, by early and conſtant habit, with the original perceptions of ſight.

WHEN we open our eyes on a magnificent proſpect, the various diſtances at which all its different parts are placed from the eye, and the immenſe extent of the whole ſcene before us, ſeem to be perceived as immediately, and as inſtantaneouſly, by the mind, as the coloured ſurface which is painted on the retina. The truth, however, unqueſtionably is, that this variety of

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diſtance, and this immenſity of extent, are not objects of ſenſe but of conception; and the notions we form of them when our eyes are open, differ from thoſe we ſhould form of them with our eyes ſhut, only in this, that they are kept ſteadily in the view of the mind, by being ſtrongly aſſociated with the ſenſations of colour, and with the original perceptions of ſight.—This obſervation will be the more readily admitted, if it is conſidered, that, by a ſkilful imitation of a natural landſcape, in a common ſhew-box, the mind may be led to form the ſame notions of variety of diſtance, and even of immenſe extent, as if the original ſcene were preſented to our ſenſes: and that, although, in this caſe, we have a ſpeculative conviction that the ſphere of our viſion only extends to a few inches; yet ſo ſtrong is the aſſociation between the original perceptions of ſight, and the conceptions which they habitually produce, that it is not poſſible for us, by any effort of our will, to prevent theſe conceptions from taking place.

FROM theſe obſervations it appears, that when the conceptions of the mind are rendered ſteady and permanent, by being ſtrongly aſſociated with any ſenſible impreſſion, they command our belief no leſs than our actual perceptions; and, therefore, if it were poſſible for us, with our eyes ſhut, to keep up, for a length of time, the conception of any ſenſible object, we ſhould, as long as this effort continued, believe that the object was preſent to our ſenſes.

IT appears to me to be no ſlight confirmation of theſe remarks, that although, in the dark, the illuſions of imagination are

are much more liable to be miſtaken for realities, than when their momentary effects on the belief are continually checked and corrected by the objects which the light of day preſents to our perceptions; yet, even total darkneſs is not ſo alarming to a perſon impreſſed with the vulgar ſtories of apparitions, as a faint and doubtful twilight, which affords to the conceptions an opportunity of fixing and prolonging their exiſtence, by attaching themſelves to ſomething which is obſcurely exhibited to the eye.—In like manner, when we look through a fog, we are frequently apt to miſtake a crow for a man; and the conception we have, upon ſuch an occaſion, of the human figure, is much more diſtinct and much more ſteady, than it would be poſſible for us to form, if we had no ſenſible object before us; inſomuch that when, on a more attentive obſervation, the crow ſhrinks to its own dimenſions, we find it impoſſible, by any effort, to conjure up the phantom which a moment before we ſeemed to perceive.

If theſe obſervations are admitted, the effects which exhibitions of fictitious diſtreſs produce on the mind, will appear leſs wonderful, than they are ſuppoſed to be. During the repreſentation of a tragedy, I acknowledge, that we have a general conviction that the whole is a fiction; but, I believe, it will be found, that the violent emotions which are ſometimes produced by the diſtreſſes of the ſtage, take their riſe, in moſt caſes, from a momentary belief, that the diſtreſſes are real. I ſay, in moſt caſes; becauſe, I acknowledge, that independently of any ſuch belief, there is ſomething contagious in a faithful expreſſion of any of the paſſions.

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THE emotions produced by tragedy are, upon this ſuppoſition, ſomewhat analogous to the dread we feel when we look down from the battlement of a tower *. In both caſes, we have a general conviction, that there is no ground for the feelings we experience; but the momentary influences of imagination are ſo powerful as to produce theſe feelings, before reflexion has time to come to our relief.

With reſpect to the dread which we feel in looking down from the battlement of a tower, it is curious to remark the effects of habit in gradually deſtroying it. The manner in which habit operates in this caſe, ſeems to be by giving us a command over our thoughts, ſo as to enable us to withdraw our attention from the precipice before us, and direct it to any other object at pleaſure. It is thus that the maſon and the ſailor not only can take precautions for their own ſafety, but remain completely maſters of themſelves in ſituations where other men, engroſſed with their imaginary danger, would experience a total ſuſpenſion of their faculties. Any ſtrong paſſion which occupies the mind produces, for the moment, the ſame effect with habit. A perſon alarmed with the apprehenſion of fire, has been known to eſcape from the top of a houſe, by a path which, at another time, he would have conſidered as impracticable; and ſoldiers, in mounting a breach, are ſaid to have ſometimes found their way to the enemy, by a route which appeared impracticable after their violent paſſions had ſubſided.

CHAPTER FOURTH.

Of Abſtraction.

SECTION I.

General Obſervations on this Faculty of the Mind.

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THE origin of appellatives, or, in other words, the origin of thoſe claſſes of objects which, in the ſchools, are called *genera*, and *ſpecies*, has been conſidered by ſome philoſophers as one of the moſt difficult problems in metaphyſics. The account of it which is given by Mr. Smith, in his Diſſertation on the Origin of Languages, appears to me to be equally ſimple and ſatisfactory.

" THE aſſignation" (ſays he) " of particular names, to denote " particular objects; that is, the inſtitution of nouns ſubſtantive; " would probably be one of the firſt ſteps towards the formation " of Language. The particular cave, whoſe covering ſheltered " the ſavage from the weather; the particular tree, whoſe fruit " relieved

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" relieved his hunger; the particular fountain, whoſe wäter " allayed his thirſt; would firſt be denominated by the words, " cave, tree, fountain; or by whatever other appellations he " might think proper, in that primitive jargon, to mark them. " Afterwards, when the more enlarged experience of this " ſavage had led him to obſerve, and his neceſſary occaſions " obliged him to make mention of, other caves, and other trees, " and other fountains; he would naturally beſtow upon each of " thoſe new objects, the ſame name by which he had been ac- " cuſtomed to expreſs the ſimilar object he was firſt acquainted " with. And thus, thoſe words, which were originally the " proper names of individuals, would each of them inſenſibly " become the common name of a multitude *."

" It is this application" (he continues) " of the name of an " individual to a great number of objects, whoſe reſemblance " naturally recalls the idea of that individual, and of the name " which expreſſes it, that ſeems originally to have given occa- " ſion to the formation of thoſe claſſes, and aſſortments, which, " in the ſchools, are called *genera* and *ſpecies*; and of which " the ingenious and eloquent Rouſſeau finds himſelf ſo much " at a loſs to account for the origin. What conſtitutes a *ſpecies*,

* The ſame account of the progreſs of the mind in the formation of *genera*, is given by the Abbé de Condillac.

" Un enfant appelle du nom d'*Arbre* le premier arbre que nous lui montrons. " Un ſecond arbre qu'il voit enſuite lui rapelle la même idée; il lui donne le " même nom; de même à un troiſième, à un quatrième, et voilà le mot d'*Arbre* " donné d'abord à un individu, qui devient pour lui un nom de claſſe ou de ge- " nre, une ideé abſtraite qui comprend tous les arbres en général."

" is

" is merely a number of objects, bearing a certain degree of " reſemblance to one another; and, on that account, denomi- " nated by a ſingle appellation, which may be applied to expreſs " any one of them *."

THIS view of the natural progreſs of the mind, in forming claſſifications of external objects, receives ſome illuſtration from a fact mentioned by Captain Cook in his account of a ſmall iſland called Wateeoo, which he viſited in ſailing from New Zealand to the Friendly Iſlands. " The inhabitants," ſays he, " were afraid to come near our cows and horſes, nor did they " form the leaſt conception of their nature. But the ſheep and " goats did not ſurpaſs the limits of their ideas; for they gave " us to underſtand that they knew them to be birds. It will " appear," he adds, " rather incredible, that human ignorance " could ever make ſo ſtrange a miſtake, there not being the " moſt diſtant ſimilitude between a ſheep or goat, and any " winged animal. But theſe people ſeemed to know nothing " of the exiſtence of any other land animals, beſides hogs, dogs, " and birds. Our ſheep and goats, they could ſee, were very " different creatures from the two firſt, and therefore they in- " ferred that they muſt belong to the latter claſs, in which " they knew that there is a conſiderable variety of ſpecies."— I would add to Cook's very judicious remarks, that the miſtake of theſe iſlanders probably did not ariſe from their conſidering a ſheep or a goat as bearing a more ſtriking reſemblance

* Diſſertation on the Origin of Languages, annexed to Mr. Smith's Theory of Moral Sentiments.

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to a bird, than to the two claſſes of quadrupeds with which they were acquainted; but to the want of a generic word, ſuch as *quadruped*, comprehending theſe two ſpecies; which men in their ſituation would no more be led to form, than a perſon who had only ſeen one individual of each ſpecies, would think of an appellative to expreſs both, inſtead of applying a proper name to each. In conſequence of the variety of birds, it appears, that they had a generic name comprehending all of them, to which it was not unnatural for them to refer any new animal they met with.

THE claſſification of different objects ſuppoſes a power of attending to ſome of their qualities or attributes, without attending to the reſt; for no two objects are to be found without ſome ſpecific difference; and no aſſortment or arrangement can be formed among things not perfectly alike, but by loſing ſight of their diſtinguiſhing peculiarities, and limiting the attention to thoſe attributes which belong to them in common. Indeed, without this power of attending ſeparately to things which our ſenſes preſent to us in a ſtate of union, we never could have had any idea of *number*; for, before we can conſider different objects as forming a multitude, it is neceſſary that we ſhould be able to apply to all of them one common name; or, in other words, that we ſhould reduce them all to the ſame genus. The various objects, for example, animate and inanimate, which are, at this moment, before me, I may claſs and number in a variety of different ways, according to the view of them that I chuſe to take. I may reckon ſucceſſively the number of ſheep, of cows, of horſes, of elms, of oaks, of beeches; or I may firſt reckon

reckon the number of animals, and then the number of trees; or I may at once reckon the number of all the organiſed ſubſtances which my ſenſes preſent to me. But whatever be the principle on which my claſſification proceeds, it is evident, that the objects numbered together, muſt be conſidered in thoſe reſpects only in which they agree with each other; and that, if I had no power of ſeparating the combinations of ſenſe, I never could have conceived them as forming a plurality.

THIS power of conſidering certain qualities or attributes of an object apart from the reſt; or, as I would rather chuſe to define it, the power which the underſtanding has, of ſeparating the combinations which are preſented to it, is diſtinguiſhed by logicians by the name of *abſtraction*. It has been ſuppoſed, by ſome philoſophers, (with what probability I ſhall not now inquire,) to form the characteriſtical attribute of a rational nature. That it is one of the moſt important of all our faculties, and very intimately connected with the exerciſe of our reaſoning powers, is beyond diſpute. And, I flatter myſelf, it will appear from the ſequel of this chapter, how much the proper management of it conduces to the ſucceſs of our philoſophical purſuits, and of our general conduct in life.

THE ſubſerviency of Abſtraction to the power of Reaſoning, and alſo, its ſubſerviency to the exertions of a Poetical or Creative Imagination, ſhall be afterwards fully illuſtrated. At preſent, it is ſufficient for my purpoſe to remark, that as abſtraction is the ground-work of claſſification, without this faculty of the mind we ſhould have been perfectly incapable of gene-

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ral ſpeculation, and all our knowledge muſt neceſſarily have been limited to individuals; and that ſome of the moſt uſeful branches of ſcience, particularly the different branches of mathematics, in which the very ſubjects of our reaſoning are abſtractions of the underſtanding, could never have poſſibly had an exiſtence. With reſpect to the ſubſerviency of this faculty to poetical imagination, it is no leſs obvious, that, as the poet is ſupplied with all his materials by experience; and as his province is limited to combine and modify things which really exiſt, ſo as to produce new wholes of his own; ſo every exertion which he thus makes of his powers, preſuppoſes the exerciſe of abſtraction in decompoſing and ſeparating actual combinations. And it was on this account that, in the chapter on Conception, I was led to make a diſtinction between that faculty, which is evidently ſimple and uncompounded, and the power of Imagination, which (at leaſt in the ſenſe in which I employ the word in theſe inquiries) is the reſult of a combination of various other powers.

I HAVE introduced theſe remarks, in order to point out a difference between the abſtractions which are ſubſervient to reaſoning, and thoſe which are ſubſervient to imagination. And, if I am not miſtaken, it is a diſtinction which has not been ſufficiently attended to by ſome writers of eminence. In every inſtance in which imagination is employed in forming new wholes, by decompounding and combining the perceptions of ſenſe, it is evidently neceſſary that the poet or the painter ſhould be able to ſtate to himſelf the circumſtances abſtracted, as ſeparate objects of conception. But this is by no means requiſite

quiſite in every caſe in which abſtraction is ſubſervient to the power of reaſoning; for it frequently happens, that we can reaſon concerning one quality or property of an object abſtracted from the reſt, while, at the ſame time, we find it impoſſible to conceive it ſeparately. Thus, I can reaſon concerning extenſion and figure, without any reference to colour; although it may be doubted, if a perſon poſſeſſed of ſight can make extenſion and figure ſteady objects of conception, without connecting with them one colour or another. Nor is this always owing (as it is in the inſtance now mentioned) merely to the aſſociation of ideas; for there are caſes, in which we can reaſon concerning things ſeparately, which it is impoſſible for us to ſuppoſe any being ſo conſtituted as to conceive apart. Thus, we can reaſon concerning length, abſtracted from any other dimenſion; although, ſurely, no underſtanding can make length, without breadth, an object of conception. And, by the way, this leads me to take notice of an error, which mathematical teachers are apt to commit, in explaining the firſt principles of geometry. By dwelling long on Euclid's firſt definitions, they lead the ſtudent to ſuppoſe that they relate to notions which are extremely myſterious; and to ſtrain his powers in fruitleſs attempts to conceive, what cannot poſſibly be made an object of conception. If theſe definitions were omitted, or very ſlightly touched upon, and the attention at once directed to geometrical reaſonings, the ſtudent would immediately perceive, that although the lines in the diagrams are really extended in two dimenſions, yet that the demonſtrations relate only to one of them; and that the human underſtanding has the faculty of reaſoning concerning things ſeparately, which are always

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always preſented to us, both by our powers of perception and conception, in a ſtate of union. Such abſtractions, in truth, are familiar to the moſt illiterate of mankind; and it is in this very way that they are inſenſibly formed. When a tradeſman ſpeaks of the length of a room, in contradiſtinction to its breadth; or when he ſpeaks of the diſtance between any two objects; he forms exactly the ſame abſtraction, which is referred to by Euclid in his ſecond definition; and which moſt of his commentators have thought it neceſſary to illuſtrate by prolix metaphyſical diſquiſitions.

I SHALL only obſerve farther, with reſpect to the nature and province of this faculty of the mind, that notwithſtanding its eſſential ſubſerviency to every act of claſſification, yet it might have been exerciſed, although we had only been acquainted with one individual object. Although, for example, we had never ſeen but one roſe, we might ſtill have been able to attend to its colour, without thinking of its other properties. This has led ſome philoſophers to ſuppoſe, that another faculty beſides abſtraction, to which they have given the name of generaliſation, is neceſſary to account for the formation of genera and ſpecies; and they have endeavoured to ſhew, that although generaliſation without abſtraction is impoſſible; yet that we might have been ſo formed, as to be able to abſtract, without being capable of generaliſing. The grounds of this opinion, it is not neceſſary for me to examine, for any of the purpoſes which I have at preſent in view.

SECTION II.

Of the Objects of our Thoughts, when we employ general Terms.

FROM the account which was given in a former chapter, of the common theories of perception, it appears to have been a prevailing opinion among philoſophers, that the qualities of external objects are perceived, by means of images or ſpecies tranſmitted to the mind by the organs of ſenſe: an opinion of which I already endeavoured to trace the origin, from certain natural prejudices ſuggeſted by the phenomena of the material world. The ſame train of thinking has led them to ſuppoſe that, in the caſe of all our other intellectual operations, there exiſt in the mind certain ideas diſtinct from the mind itſelf; and that theſe ideas are the objects about which our thoughts are employed. When I recollect, for example, the appearance of an abſent friend, it is ſuppoſed that the immediate object of my thought is an *idea* of my friend; which I at firſt received by my ſenſes, and which I have been enabled to retain in the mind by the faculty of memory. When I form to myſelf any imaginary combination by an effort of poetical invention, it is ſuppoſed, in like manner, that the parts which I combine, exiſted previouſly in the mind; and furniſh the

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the materials on which it is the province of imagination to operate. It is to Dr. Reid we owe the important remark, that all theſe notions are wholly hypothetical; that it is impoſſible to produce a ſhadow of evidence in ſupport of them; and that, even although we were to admit their truth, they would not render the phenomena in queſtion more intelligible. According to his principles, therefore, we have no ground for ſuppoſing, that, in any one operation of the mind, there exiſts in it an object diſtinct from the mind itſelf; and all the common expreſſions which involve ſuch a ſuppoſition, are to be conſidered as unmeaning circumlocutions, which ſerve only to diſguiſe from us the real hiſtory of the intellectual phenomena *.

We

* In order to prevent miſapprehenſions of Dr. Reid's meaning, in his reaſonings againſt the ideal theory, it may be neceſſary to explain, a little more fully than I have done in the text, in what ſenſe he calls in queſtion the exiſtence of *ideas*: for the meaning which this word is employed to convey in popular diſcourſe, differs widely from that which is annexed to it by the philoſophers whoſe opinion he controverts. This explanation I ſhall give in his own words.

"In popular language, idea ſignifies the ſame thing as conception, apprehen-
"ſion, notion. To have an idea of any thing, is to conceive it. To have a
"diſtinct idea, is to conceive it diſtinctly. To have no idea of it, is not to
"conceive it at all.—When the word idea is taken in this popular ſenſe, no
"man can poſſibly doubt whether he has ideas."

"According to the philoſophical meaning of the word *idea*, it does not ſig-
"nify that act of the mind which we call thought, or conception, but ſome
"*object* of thought. Of theſe objects of thought called ideas, different ſects of
"philoſophers have given very different accounts."

"Some have held them to be ſelf-exiſtent; others to be in the divine mind;
"others in our own minds; and others in the brain, or ſenſorium." p. 213.

"The Peripatetick ſyſtem of ſpecies and phantaſms, as well as the Platonick
"ſyſtem of ideas, is grounded upon this principle, that in every kind of thought,
"there

" WE are at a loſs to know," (ſays this excellent philoſopher,) " how we perceive diſtant objects; how we remember things " paſt; how we imagine things that have no exiſtence. Ideas " in the mind ſeem to account for all theſe operations: they " are all by the means of ideas reduced to one operation; to a " kind of feeling, or immediate perception of things preſent, " and in contact with the percipient; and feeling is an opera- " tion ſo familiar, that we think it needs no explanation, but " may ſerve to explain other operations."

" BUT this feeling, or immediate perception, is as difficult " to be comprehended, as the things which we pretend to ex-

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" there muſt be ſome object that really exiſts; in every operation of the mind, " ſomething to work upon. Whether this immediate object be called an idea " with Plato, or a phantaſm or ſpecies with Ariſtotle; whether it be eternal and " uncreated, or produced by the impreſſions of external objects, is of no conſe- " quence in the preſent argument." Ibid. p. 388.

" So much is this opinion fixed in the minds of philoſophers, that, I doubt " not but it will appear to moſt, a very ſtrange paradox, or rather a contra- " diction, that men ſhould think without ideas. But this appearance of con- " tradiction ariſes from the ambiguity of the word idea. If the idea of a thing " means only the thought of it, which is the moſt common meaning of the " word, to think without ideas, is to think without thought; which is un- " doubtedly a contradiction. But an idea, according to the definition given of " it by philoſophers, is not thought, but an object of thought, which really " exiſts, and is perceived, &c." Ibid. p. 390.

I have only to add, that when, in this work, I make uſe of the word idea in ſtating my own opinions, I employ it uniformly in the popular ſenſe, and not in the philoſophical ſenſe, as now explained: it would be better, perhaps, to avoid it altogether; but I have found it difficult to do ſo, without adopting unuſual modes of expreſſion. I flatter myſelf that I have uſed it with due caution.

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" plain by it. Two things may be in contact, without " any feeling or perception; there must therefore be in " the percipient, a power to feel, or to perceive. How this " power is produced, and how it operates, is quite beyond the " reach of our knowledge. As little can we know, whether " this power must be limited to things present, and in contact " with us. Neither can any man pretend to prove, that the " Being who gave us the power to perceive things present, " may not give us the power to perceive things distant, to " remember things past, and to conceive things that never " existed *."

In another part of his work, Dr. Reid has occasion to trace the origin of the prejudice which has led philosophers to suppose, that, in all the operations of the understanding, there must be an object of thought, which really exists while we think of it. His remarks on this subject, which are highly ingenious and satisfactory, are contained in his account of the different theories concerning conception †.

As in all the antient metaphysical systems it was taken for granted, (probably from the analogy of our external perceptions,) that every exertion of thought implies the existence of an object distinct from the thinking being; it naturally occurred, as a very curious question, What is the immediate object of our attention, when we are engaged in any general speculation? or, in other words, what is the nature of the idea

* Essays on the Intellectual Powers, p. 214. † Ibid. p. 378.

corre-

corresponding to a general term? When I think of any particular object which I have formerly perceived, such as a particular friend, a particular tree, or a particular mountain, I can comprehend what is meant by a picture or representation of such objects; and therefore the explanation given by the ideal theory of that act of the mind which we formerly called Conception, if not perfectly satisfactory, is at least not wholly unintelligible. But what account shall we give, upon the principles of this theory, of the objects of my thoughts, when I employ the words, friend, tree, mountain, as generic terms? For, that all the things I have ever perceived are individuals; and consequently, that the ideas denoted by general words, (if such ideas exist,) are not copied from any originals that have fallen under my observation; is not only self-evident, but almost an identical proposition.

In answer to this question, the Platonists, and, at a still earlier period, the Pythagoreans, taught, that, although these universal ideas are not copied from any objects perceivable by sense, yet that they have an existence independent of the human mind, and are no more to be confounded with the understanding, of which they are the proper objects, than material things are to be confounded with our powers of external perception: that, as all the individuals which compose a genus, must possess something in common; and as it is in consequence of this, that they belong to that genus, and are distinguishable by the same name, this common thing forms the essence of each; and is the object of the understanding, when we reason concerning the genus. They maintained also, that this common

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eſſence *, notwithſtanding its inſeparable union with a multitude of different individuals, is in itſelf one, and indiviſible.

On moſt of theſe points, the philoſophy of Ariſtotle ſeems to have coincided very nearly with that of Plato. The language, however, which theſe philoſophers employed on this ſubject was different, and gave to their doctrines the appearance of a wider diverſity than probably exiſted between their opinions. While Plato was led, by his paſſion for the marvellous and the myſterious, to inſiſt on the incomprehenſible union of the ſame idea or eſſence, with a number of individuals, without multiplication or diviſion †; Ariſtotle, more cautious, and aiming at greater perſpicuity, contented himſelf with ſaying, that all individuals are compoſed of matter and form; and that it is in conſequence of poſſeſſing a common form, that different individuals belong to the ſame genus. But they both agreed, that, as the matter, or the individual natures of objects were per-

* In this very imperfect ſketch of the opinions of the antients concerning univerſals, I have ſubſtituted, inſtead of the word *idea*, the word *eſſence*, as better fitted to convey to a modern reader the true import of Plato's expreſſions. The word *eſſentia* is ſaid to have been firſt employed by Cicero; and it was afterwards adopted by the ſchoolmen, in the ſame ſenſe in which the Platoniſts uſed the word *idea*. See Dr. Reid's Eſſays on the Intellectual Powers, p. 473.

† "The idea of a thing," (ſays Plato,) "is that which makes *one* of the "*many*; which, preſerving the unity and integrity of its own nature, runs "through and mixes with things infinite in number; and yet, however multi-"form it may appear, is always the ſame: ſo that by it we find out and diſ-"criminate the thing, whatever ſhapes it may aſſume, and under whatever diſguiſe "it may conceal itſelf."——Plato in Philebo; (quoted by the Author of the Origin and Progreſs of Language, vol. i. p. 100, 2d edit.)

ceived

ceived by ſenſe; ſo the general idea, or eſſence, or form, was perceived by the intellect; and that, as the attention of the vulgar was chiefly engroſſed with the former, ſo the latter furniſhed to the philoſopher the materials of his ſpeculations.

THE chief difference between the opinions of Plato and Ariſtotle on the ſubject of ideas, related to the mode of their exiſtence. That the matter of which all things are made, exiſted from eternity, was a principle which both admitted; but Plato farther taught, that, of every ſpecies of things, there is an idea or form which alſo exiſted from eternity; and that this idea is the exemplar or model according to which the individuals of the ſpecies were made; whereas Ariſtotle held, that, although matter may exiſt without form, yet that forms could not exiſt without matter *.

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* In this account of the difference between Plato and Ariſtotle on the ſubject of ideas, I have chiefly followed Brucker, whoſe very laborious reſearches with reſpect to this article of the hiſtory of philoſophy are well known. In ſtating the diſtinction, however, I have confined myſelf to as general terms as poſſible; as the ſubject is involved in much obſcurity, and has divided the opinions of very eminent writers. The reader will find the reſult of Brucker's inquiries, in his own words, in Note (F).

The authority of Brucker, in this inſtance, has the more weight with me, as it coincides in the moſt material reſpects with that of Dr. Reid. See his Eſſays on the Intellectual Powers of Man, and the concluſion of his Inquiry into the Human Mind.

A very different account of Ariſtotle's doctrine, in thoſe particulars in which it is commonly ſuppoſed to differ from that of Plato, is given by two modern writers of great learning, whoſe opinions are juſtly entitled to much reſpect, from their familiar acquaintance with Ariſtotle's latter Commentators of the Alexandrian

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THE doctrine of the Stoics concerning univerſals, differed widely from thoſe both of Plato and Ariſtotle, and ſeems to have approached to a ſpeculation which is commonly ſuppoſed to be of a more recent origin, and which an eminent philoſopher of the preſent age has ranked among the diſcoveries which do the greateſt honour to modern genius *.

WHETHER this doctrine of the Stoics coincided entirely with that of the Nominaliſts, (whoſe opinions I ſhall afterwards endeavour to explain,) or whether it did not reſemble more, a doctrine maintained by another ſect of ſchoolmen called Conceptualiſts, I ſhall not inquire. The determination of this queſtion is intereſting only to men of erudition; for the knowledge we poſſeſs of this part of the Stoical philoſophy, is too imperfect to aſſiſt us in the farther proſecution of the argument, or even to diminiſh the merit of thoſe philoſophers who have, in modern times, been led to ſimilar concluſions †.

Alexandrian School.——See Origin and Progreſs of Language, vol. i. and HARRIS's Hermes.

It is of no conſequence, for any of the purpoſes which I have at preſent in view, what opinion we form on this much controverted point of philoſophical hiſtory. In ſo far as the ideal theory was an attempt to explain the manner in which our general ſpeculations are carried on, it is agreed on all hands, that the doctrines of Plato and Ariſtotle were eſſentially the ſame; and accordingly, what I have ſaid on that ſubject, coincides intirely with a paſſage which the reader will find in "Origin and Progreſs of Language," vol. i. p. 38. 2d edit.

* Treatiſe of Human Nature, book i. part i. ſect. 7.

† See Note (G).

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As it is not my object, in this work, to enter into hiſtorical details, any farther than is neceſſary for illuſtrating the ſubjects of which I treat, I ſhall paſs over the various attempts which were made by the Eclectic philoſophers, (a ſect which aroſe at Alexandria about the beginning of the third century,) to reconcile the doctrines of Plato and Ariſtotle concerning ideas. The endleſs difficulties, it would appear, to which their ſpeculations led, induced, at laſt, the more cautious and modeſt inquirers to baniſh them entirely from Dialectics, and to content themſelves with ſtudying the arrangements or claſſifications of univerſals, which the antient philoſophers had made, without engaging in any metaphyſical diſquiſitions concerning their nature. Porphyry, in particular, although he tells us, that he had ſpeculated much on this ſubject; yet, in his Introduction to Ariſtotle's Categories, waves the conſideration of it as obſcure and intricate. On ſuch queſtions as theſe; "Whether genera and "ſpecies exiſt in nature, or are only conceptions of the "Human Mind; and (on the ſuppoſition that they exiſt "in nature) whether they are inherent in the objects of "ſenſe, or disjoined from them?" he declines giving any determination.

THIS paſſage in Porphyry's Introduction is an object of curioſity; as, by a ſingular concurrence of circumſtances, it ſerved to perpetuate the memory of a controverſy from which it was the author's intention to divert the inquiries of his readers. Amidſt the diſorders produced by the irruptions of the Barbarians, the knowledge of the Greek tongue was almoſt entirely loſt; and the ſtudies of philoſophers were confined to Latin

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verſions of Ariſtotle's Dialectics, and of Porphyry's Introduction concerning the Categories. With men who had a reliſh for ſuch diſquiſitions, it is probable that the paſſage already quoted from Porphyry, would have a tendency rather to excite than to damp curioſity; and accordingly, we have reaſon to believe, that the controverſy to which it relates continued, during the dark ages, to form a favourite ſubject of diſcuſſion. The opinion which was prevalent was, (to uſe the ſcholaſtic language of the times,) that univerſals do not exiſt *before* things, nor *after* things, but *in* things; that is, (if I may be allowed to attempt a commentary upon expreſſions to which I do not pretend to be able to annex very preciſe notions,) univerſal ideas have not (as Plato thought) an exiſtence ſeparable from individual objects; and, therefore, they could not have exiſted prior to them in the order of time; nor yet, (according to the doctrine of the Stoics,) are they mere conceptions of the mind, formed in conſequence of an examination and compariſon of particulars; but theſe ideas or forms are from eternity united inſeparably with that matter of which things conſiſt; or, as the Ariſtotelians ſometimes expreſs themſelves, the forms of things are from eternity immerſed in matter.——The reader will, I hope, forgive me for entering into theſe details, not only on account of their connexion with the obſervations which are to follow; but as they relate to a controverſy which, for many ages, employed all the ingenuity and learning in Europe; and which, therefore, however frivolous in itſelf, deſerves the attention of philoſophers, as one of the moſt curious events which occurs in the hiſtory of the Human Mind.

Such

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SUCH appears to have been the prevailing opinion concerning the nature of univerſals, till the eleventh century; when a new doctrine, or (as ſome authors think) a doctrine borrowed from the ſchool of Zeno, was propoſed by Roſcelinus *; and ſoon after very widely propagated over Europe by the abilities and eloquence of one of his ſcholars, the celebrated Peter Abelard. According to theſe philoſophers, there are no exiſtences in nature correſponding to general terms; and the objects of our attention in all our general ſpeculations are not ideas, but words.

IN conſequence of this new doctrine, the ſchoolmen gradually formed themſelves into two ſects: one of which attached itſelf to the opinions of Roſcelinus and Abelard; while the other adhered to the principles of Ariſtotle. Of theſe ſects, the former are known in literary hiſtory by the name of the Nominaliſts; the latter, by that of the Realiſts.

As it is with the doctrine of the Nominaliſts that my own opinion on this ſubject coincides; and as I propoſe to deduce from it ſome conſequences, which appear to me important, I ſhall endeavour to ſtate it as clearly and preciſely as I am able, purſuing, however, rather the train of my own thoughts, than guided by the reaſonings of any particular author.

I FORMERLY explained in what manner the words, which, in the infancy of language, were proper names, became gra-

* See Note [H].

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dually appellatives; in conſequence of which extenſion of their ſignification, they would expreſs, when applied to individuals, thoſe qualities only which are common to the whole genus. Now, it is evident, that, with reſpect to individuals of the ſame genus, there are two claſſes of truths; the one, particular truths relating to each individual apart, and deduced from a conſideration of its peculiar and diſtinguiſhing properties; the other, general truths, deduced from a conſideration of their common qualities; and equally applicable to all of them. Such truths may be conveniently expreſſed, by means of general terms; ſo as to form propoſitions, comprehending under them as many particular truths, as there are individuals comprehended under the general terms. It is farther evident, that there are two ways in which ſuch general truths may be obtained; either by fixing the attention on one individual, in ſuch a manner that our reaſoning may involve no circumſtances but thoſe which are common to the whole genus; or, (laying aſide entirely the conſideration of things,) by means of the general terms with which language ſupplies us. In either of theſe caſes, our inveſtigations muſt neceſſarily lead us to general concluſions. In the firſt caſe; our attention being limited to thoſe circumſtances, in which the ſubject of our reaſoning reſembles all other individuals of the ſame genus, whatever we demonſtrate with reſpect to this ſubject muſt be true of every other to which the ſame attributes belong. In the ſecond caſe; the ſubject of our reaſoning being expreſſed by a generic word, which applies in common to a number of individuals, the concluſion we form muſt be as extenſive in its application, as the name of the ſubject is in its meaning. The former proceſs is analogous to the practice

practice of geometers, who, in their moſt general reaſonings, direct the attention to a particular diagram: the latter, to that of algebraiſts, who carry on their inveſtigations by means of ſymbols *. In caſes of this laſt ſort, it may frequently happen, from the aſſociation of ideas, that a general word may recal ſome one individual to which it is applicable; but this is ſo far from being neceſſary to the accuracy of our reaſoning, that, excepting in ſome caſes, in which it may be uſeful to check us in the abuſe of general terms, it always has a tendency, more or leſs, to miſlead us from the truth. As the deciſion of a judge muſt neceſſarily be impartial, when he is only acquainted with the relations in which the parties ſtand to each other, and when their names are ſupplied by letters of the alphabet, or by the fictitious names of Titius, Caius, and Sempronius; ſo, in every proceſs of reaſoning, the concluſion we form is moſt likely to be logically juſt, when the attention is confined ſolely to ſigns; and when the imagination does not preſent to it thoſe individual objects which may warp the judgment by caſual aſſociations.

To theſe remarks, it may not be improper to add, that, although in our ſpeculations concerning individuals, it is poſſible

* Theſe two methods of obtaining general truths proceed on the ſame principles; and are, in fact, much leſs different from each other, than they appear to be, at firſt view. When we carry on a proceſs of general reaſoning, by fixing our attention on a particular individual of a genus, this individual is to be conſidered merely as a ſign or repreſentative; and differs from any other ſign only in this, that it bears a certain reſemblance to the things it denotes.—The ſtraight lines which are employed in the fifth book of Euclid to repreſent magnitudes in general, differ from the algebraical expreſſions of theſe magnitudes, in the ſame reſpects in which picture-writing differs from arbitrary characters.

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to carry on proceſſes of reaſoning, by fixing our attention on the objects themſelves, without the uſe of language; yet it is alſo in our power to accompliſh the ſame end, by ſubſtituting for theſe objects, words, or other arbitrary ſigns. The difference between the employment of language in ſuch caſes, and in our ſpeculations concerning claſſes or genera, is; that in the former caſe the uſe of words is, in a great meaſure, optional; whereas, in the latter, it is eſſentially neceſſary. This obſervation deſerves our attention the more, that, if I am not miſtaken, it has contributed to miſlead ſome of the Realiſts; by giving riſe to an idea, that the uſe of language, in thinking about univerſals, however convenient, is not more neceſſary than in thinking about individuals.

ACCORDING to this view of the proceſs of the mind, in carrying on general ſpeculations, that IDEA which the antient philoſophers conſidered as the eſſence of an individual, is nothing more than the particular quality or qualities in which it reſembles other individuals of the ſame claſs; and in conſequence of which, a generic name is applied to it. It is the poſſeſſion of this quality, that entitles the individual to the generic appellation; and which, therefore, may be ſaid to be eſſential to its claſſification with that particular genus; but as all claſſifications are to a certain degree arbitrary, it does not neceſſarily follow, that it is more eſſential to its exiſtence as an individual, than various other qualities which we are accuſtomed to regard as accidental. In other words, (if I may borrow the language of modern philoſophy,) this quality forms its nominal, but not its real eſſence.

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THESE obſervations will, I flatter myſelf, be ſufficient for the ſatisfaction of ſuch of my readers as are at all converſant with philoſophical inquiries. For the ſake of others, to whom this diſquiſition may be new, I have added the following illuſtrations.

I SHALL have occaſion to examine, in another part of my work, how far it is true, (as is commonly believed,) that every proceſs of reaſoning may be reſolved into a ſeries of ſyllogiſms; and to point out ſome limitations, with which, I apprehend, it is neceſſary that this opinion ſhould be received. As it would lead me, however, too far from my preſent ſubject, to anticipate any part of the doctrine which I am then to propoſe, I ſhall, in the following remarks, proceed on the ſuppoſition, that the ſyllogiſtic theory is well-founded; a ſuppoſition which, although not ſtrictly agreeable to truth, is yet ſufficiently accurate for the uſe which I am now to make of it. Take, then, any ſtep of one of Euclid's demonſtrations; for example, the firſt ſtep of his firſt propoſition, and ſtate it in the form of a ſyllogiſm.——"All ſtraight lines, drawn from the centre of a "circle to the circumference, are equal to one another." "But "A B, and C D, are ſtraight lines, drawn from the centre of "a circle to the circumference. Therefore, A B is equal to "C D."—It is perfectly manifeſt, that, in order to feel the force of this concluſion, it is by no means neceſſary, that I ſhould annex any particular notions to the letters A B, or C D, or that I ſhould comprehend what is meant by *equality*, or by a *circle*, its *centre*, and its *circumference*. Every perſon muſt be ſatisfied, that the truth of the concluſion is neceſſarily implied

in

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in that of the two premiſes; whatever the particular things may be to which theſe premiſes may relate. In the following ſyllogiſm, too:——"All men muſt die;—Peter is a man;—"therefore Peter muſt die;"—the evidence of the concluſion does not in the leaſt depend on the particular notions I annex to the words *man*, and *Peter*; but would be equally complete, if we were to ſubſtitute inſtead of them, two letters of the alphabet, or any other inſignificant characters.—"All X's "muſt die;—*Z* is an X;—therefore Z muſt die;"—is a ſyllogiſm which forces the aſſent no leſs than the former. It is farther obvious, that this ſyllogiſm would be equally concluſive, if, inſtead of the word *die*, I were to ſubſtitute any other verb that the language contains; and that, in order to perceive the juſtneſs of the inference, it is not even neceſſary that I ſhould underſtand its meaning.

In general, it might be eaſily ſhewn, that all the rules of logic, with reſpect to ſyllogiſms, might be demonſtrated, without having recourſe to any thing but letters of the alphabet; in the ſame manner, (and I may add, on the very ſame principles,) on which the algebraiſt demonſtrates, by means of theſe letters, the various rules for tranſpoſing the terms of an equation.

From what has been ſaid, it follows, that the aſſent we give *to the concluſion of a ſyllogiſm does not reſult from any examination* of the notions expreſſed by the different propoſitions of which it is compoſed, but is an immediate conſequence of the relations in which the words ſtand to each other. The truth is, that, in every ſyllogiſm, the inference is only a particular

inſtance of the general axiom, that whatever is true univerſally of any ſign, muſt alſo be true of every individual which that ſign can be employed to expreſs. Admitting, therefore, that every proceſs of reaſoning may be reſolved into a ſeries of ſyllogiſms, it follows, that this operation of the mind furniſhes no proof of the exiſtence of any thing correſponding to general terms, diſtinct from the individuals to which theſe terms are applicable.

THESE remarks, I am very ſenſible, do, by no means, exhauſt the ſubject; for there are various modes of reaſoning, to which the ſyllogiſtic theory does not apply. But, in all of *them, without exception, it will be found, on examination,* that the evidence of our concluſions appears immediately from the conſideration of the words in which the premiſes are expreſſed; without any reference to the things which they denote. The imperfect account which is given of deductive evidence, in the received ſyſtems of logic, makes it impoſſible for me, in this place, to proſecute the ſubject any farther.

AFTER all that I have ſaid on the uſe of language as an inſtrument of reaſoning, I can eaſily foreſee a variety of objections, which may occur to the doctrine I have been endeavouring to eſtabliſh. But, without entering into a particular examination of theſe objections, I believe I may venture to affirm, that moſt, if not all, of them take their riſe from confounding reaſoning, or deduction, properly ſo called, with certain other intellectual proceſſes, which it is neceſſary for us to employ in the inveſtigation of truth. That it is frequently of eſſential importance to us, in our ſpeculations, to withdraw our attention from words, and to direct it to the things they denote,

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denote, I am very ready to acknowledge. All that I aſſert is, that, in ſo far as our ſpeculations conſiſt of that proceſs of the mind which is properly called reaſoning, they may be carried on by words alone; or, which comes to the ſame thing, that every proceſs of reaſoning is perfectly analogous to an algebraical operation. What I mean by "the other intellectual proceſſes diſtinct from reaſoning, which it is neceſſary for us "*ſometimes to employ in the inveſtigation of truth*," will, I hope, appear clearly from the following remarks.

In algebraical inveſtigations, it is well known, that the practical application of a general expreſſion, is frequently limited by the conditions which the hypotheſis involves; and that, in conſequence of a want of attention to this circumſtance, ſome mathematicians of the firſt eminence have been led to adopt the moſt paradoxical and abſurd concluſions. Without this cautious exerciſe of the judgment, in the interpretation of the algebraical language, no dexterity in the uſe of the calculus will be ſufficient to preſerve us from error. Even in algebra, therefore, there is an application of the intellectual powers perfectly diſtinct from any proceſs of reaſoning; and which is abſolutely neceſſary for conducting us to the truth.

In geometry, we are not liable to adopt the ſame paradoxical concluſions, as in algebra; becauſe the diagrams to which our attention is directed, ſerve as a continual check on our reaſoning powers. Theſe diagrams exhibit to our very ſenſes, a variety of relations among the quantities under conſideration, which the language of algebra is too general to expreſs; in conſequence of which,

which, we are not conſcious of any effort of the judgment diſtinct from a proceſs of reaſoning. As every geometrical inveſtigation, however, may be expreſſed algebraically, it is manifeſt, that, in geometry, as well as in algebra, there is an exerciſe of the intellectual powers, diſtinct from the logical proceſs; although, in the former ſcience, it is rendered ſo eaſy, by the uſe of diagrams, as to eſcape our attention.

THE ſame ſource of error and of abſurdity, which exiſts in algebra, is to be found, in a much greater degree, in the other branches of knowledge. Abſtracting entirely from the ambiguity of language; and ſuppoſing alſo our reaſonings to be logically accurate, it would ſtill be neceſſary for us, from time to time, in all our ſpeculations, to lay aſide the uſe of words, and to have recourſe to particular examples, or illuſtrations, in order to correct and to limit our general concluſions.—To a want of attention to this circumſtance, a number of the ſpeculative abſurdities which are current in the world, might, I am perſuaded, be eaſily traced.

BESIDES, however, this ſource of error, which is in ſome degree common to all the ſciences, there is a great variety of others, from which mathematics are entirely exempted; and which perpetually tend to lead us aſtray in our philoſophical inquiries. Of theſe, the moſt important is, that ambiguity in the ſignification of words, which renders it ſo difficult to avoid employing the ſame expreſſions in different ſenſes, in the courſe of the ſame proceſs of reaſoning. This ſource of miſtake, in-

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deed, is apt, in a much greater degree, to affect our concluſions in metaphyſics, morals, and politics, than in the different branches of natural philoſophy; but, if we except mathematics, there is no ſcience whatever, in which it has not a very ſenſible influence. In algebra, we may proceed with perfect ſafety through the longeſt inveſtigations, without carrying our attention beyond the ſigns, till we arrive at the laſt reſult. But in the other ſciences, excepting in thoſe caſes in which we have fixed the meaning of all our terms by accurate definitions, and have rendered the uſe of theſe terms perfectly familiar to us by very long habit, it is but ſeldom that we can proceed in this manner without danger of error. In many caſes, it is neceſſary for us to keep up, during the whole of our inveſtigations, a ſcrupulous and conſtant attention to the ſignification of our expreſſions; and, in moſt caſes, this caution in the uſe of words, is a much more difficult effort of the mind, than the logical proceſs. But ſtill this furniſhes no exception to the general doctrine already delivered; for the attention we find it neceſſary to give to the import of our words, ariſes only from the accidental circumſtance of their ambiguity, and has no eſſential connection with that proceſs of the mind, which is properly called reaſoning; and which conſiſts in the inference of a concluſion from premiſes. In all the ſciences, this proceſs of the mind is perfectly analogous to an algebraical operation; or, in other words, (when the meaning of our expreſſions is once fixed by definitions,) it may be carried on intirely by the uſe of ſigns, without attending, during the time of the proceſs, to the things ſignified.

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THE concluſion to which the foregoing obſervations lead, appears to me to be deciſive of the queſtion, with reſpect to the objects of our thoughts when we employ general terms; for if it be granted, that words, even when employed without any reference to their particular ſignification, form an inſtrument of thought ſufficient for all the purpoſes of reaſoning; the only ſhadow of an argument in proof of the common doctrine on the ſubject, (I mean that which is founded on the impoſſibility of explaining this proceſs of the mind on any other hypotheſis,) falls to the ground. Nothing leſs, ſurely, than a conviction of this impoſſibility, could have ſo long reconciled philoſophers to an hypotheſis unſupported by any direct evidence; and acknowledged even by its warmeſt defenders, to involve much difficulty and myſtery.

IT does not fall within my plan, to enter, in this part of my work, into a particular conſideration of the practical conſequences which follow from the foregoing doctrine. I cannot, however, help remarking the importance of cultivating, on the one hand, a talent for ready and various illuſtration; and, on the other, a habit of reaſoning by means of general terms. The former talent is neceſſary, not only for correcting and limiting our general concluſions, but for enabling us to apply our knowledge, when occaſion requires, to its real practical uſe. The latter ſerves the double purpoſe, of preventing our attention from being diſtracted during the courſe of our reaſonings, by ideas which are foreign to the point in queſtion; and of diverting the attention from thoſe conceptions of particular objects and particular events which might diſturb the judgment, by the

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ideas and feelings, which are apt to be aſſociated with them, in conſequence of our own caſual experience.

THIS laſt obſervation points out to us, alſo, one principal foundation of the art of the orator. As his object is not ſo much to inform and to ſatisfy the underſtandings of his hearers, as to force their immediate aſſent; it is frequently of uſe to him to clothe his reaſonings in that ſpecific and figurative language, which may either awaken in their minds aſſociations favourable to his purpoſe, or may divert their attention from a logical examination of his argument. A proceſs of reaſoning ſo expreſſed, affords at once an exerciſe to the judgment, to the imagination, and to the paſſions; and is apt, even when looſe and inconſequential, to impoſe on the beſt underſtandings.

IT appears farther, from the remarks which have been made, that the perfection of philoſophical language, conſidered either as an inſtrument of thought, or as a medium of communication with others, conſiſts in the uſe of expreſſions, which, from their generality, have no tendency to awaken the powers of conception and imagination: or, in other words, it conſiſts in its approaching, as nearly as poſſible, in its nature, to the language of algebra. And hence the effects which long habits of philoſophical ſpeculation have, in weakening, by diſuſe, thoſe faculties of the mind, which are neceſſary for the exertions of the poet and the orator; and of gradually forming a ſtyle of compoſition, which they who read merely for amuſement, are apt to cenſure for a want of vivacity and of ornament.

SECTION III.

Remarks on the Opinions of ſome modern Philoſophers on the Subject of the foregoing Section.

AFTER the death of Abelard, through whoſe abilities and eloquence the ſect of Nominaliſts had enjoyed, for a few years, a very ſplendid triumph, the ſyſtem of the Realiſts began to revive; and it was ſoon ſo completely re-eſtabliſhed in the ſchools, as to prevail, with little or no oppoſition, till the fourteenth century. What the circumſtances were, which led philoſophers to abandon a doctrine, which ſeems ſo ſtrongly to recommend itſelf by its ſimplicity, it is not very eaſy to conceive. Probably the heretical opinions, which had ſubjected both Abelard and Roſcelinus to the cenſure of the church, might create a prejudice alſo againſt their philoſophical principles; and probably too, the manner in which theſe principles were ſtated and defended, was not the cleareſt, nor the moſt ſatisfactory *. The principal cauſe, however, I am diſpoſed to think, of the decline of the ſect of Nominaliſts, was their want of ſome palpable ex-

* The great argument which the Nominaliſts employed againſt the exiſtence of univerſals was: "Entia non ſunt multiplicanda præter neceſſitatem."

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ample, by means of which they might illuſtrate their doctrine. It is by the uſe which algebraiſts make of the letters of the alphabet in carrying on their operations, that Leibnitz and Berkeley have been moſt ſucceſsful in explaining the uſe of language as an inſtrument of thought; and, as in the twelfth century, the algebraical art was entirely unknown, Roſcelinus and Abelard muſt have been reduced to the neceſſity of conveying their leading idea by general circumlocutions; and muſt have found conſiderable difficulty in ſtating it in a manner ſatisfactory to themſelves: a conſideration, by the way, which, if it accounts for the ſlow progreſs which this doctrine made in the world, places in the more ſtriking light, the genius of thoſe men whoſe ſagacity led them, under ſo great diſadvantages, to approach to a concluſion ſo juſt and philoſophical in itſelf, and ſo oppoſite to the prevailing opinions of their age.

In the fourteenth century, this ſect ſeems to have been almoſt completely extinct; their doctrine being equally reprobated by the two great parties which then divided the ſchools, the followers of Duns Scotus and of Thomas Aquinas. Theſe, although they differed in their manner of explaining the nature of univerſals, and oppoſed each other's opinions with much aſperity, yet united in rejecting the doctrine of the Nominaliſts, not only as abſurd, but as leading to the moſt dangerous conſequences. At laſt, William Occam, a native of England, and a ſcholar of Duns Scotus, revived the antient controverſy: and with equal ability and ſucceſs vindicated the long-abandoned philoſophy of Roſcelinus. From this time the diſpute was carried on with great warmth, in the univerſities of France,

of

of Germany, and of England; more particularly in the two former countries, where the ſovereigns were led, by ſome political views, to intereſt themſelves deeply in the conteſt; and even to employ the civil power in ſupporting their favourite opinions. The emperor Lewis of Bavaria, in return for the aſſiſtance which, in his diſputes with the Pope *, Occam had given to him by his writings, ſided with the Nominaliſts. Lewis the Eleventh of France, on the other hand, attached himſelf to the Realiſts, and made their antagoniſts the objects of a cruel perſecution †.

THE Proteſtant Reformation, at length, involved men of learning in diſcuſſions of a more intereſting nature; but even the zeal of theological controverſy could hardly exceed that with which the Nominaliſts and Realiſts had for ſome time before maintained their reſpective doctrines. "Clamores pri-" mum ad ravim," (ſays an author who had himſelf been an eye-witneſs of theſe literary diſputes,) "hinc *improbitas*, " ſannæ, minæ, convitia, dum luctantur, et uterque alterum " tentat proſternere: conſumtis verbis venitur ad pugnos, ad " veram luctam ex ficta et ſimulata. Quin etiam, quæ contin-" gunt in palæſtra, illic non deſunt, colaphi, alapæ, conſputio, " calces, morſus, etiam quæ jam ſupra leges palæſtræ, fuſtes, " ferrum, faucii multi, nonnunquam occiſi ‡." That this ac-

* Occam, we are told, was accuſtomed to ſay to the Emperor: "Tu me " defendas gladio, et ego te defendam calamo." BRUCKER, vol. iii. p. 848.

† MOSHEIM's Eccleſiaſtical Hiſtory.

‡ LUDOVICUS VIVES.

count.